Regional Information Report 3A15-07

Salmon Age, Sex, and Length Catalog for the Kuskokwim Area, 2013

Final Report for Project 10-303
USFWS Office of Subsistence Management
Fisheries Resource Monitoring Program

by

Zachary W. Liller

Amy R. Brodersen

and

Corinne L. Truesdale

December 2015

Alaska Department of Fish and Game **Division of Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, Special Publications and the Division of Commercial Fisheries Regional Reports. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

REGIONAL INFORMATION REPORT 3A15-07

SALMON AGE, SEX, AND LENGTH CATALOG FOR THE KUSKOKWIM AREA, 2012

by
Zachary W. Liller, Amy R. Brodersen, and Corinne L. Truesdale
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

Alaska Department of Fish and Game
Division of Commercial Fisheries
333 Raspberry Road, Anchorage, Alaska, 99518-1565

December 2015

Development and publication of this manuscript was partially funded by the USFWS Office of Subsistence Management (Project 10-303) Fisheries Resource Monitoring Program under FWS Agreement Number 70181AJ028.

The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at http://www.adfg.alaska.gov/sf/publications/.

Amy R. Brodersen, Zachary W. Liller, and Corinne L. Truesdale,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Rd, Anchorage, Alaska, 99518, USA

This document should be cited as:
Liller, Z. W., A. B. Brodersen, and C. L. Truesdale. 2015. Salmon age, sex, and length catalog for the Kuskokwim Area, 2013. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A15-07, Anchorage.

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility please write:
ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK 99811-5526
U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042, Arlington, VA 22203
Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW MS 5230, Washington DC 20240

The department's ADA Coordinator can be reached via phone at the following numbers:
(VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648,
(Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

For information on alternative formats and questions on this publication, please contact:
ADF&G, Division of Sport Fish, Research and Technical Services, 333 Raspberry Rd, Anchorage AK 99518 (907) 267-2375

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

ABSTRACT

Pacific salmon *Oncorhynchus* spp. age, sex, and length data have been collected from Kuskokwim Area harvests and escapements since 1961. Since 1995, the salmon age, sex, and length catalog for the Kuskokwim Area has been produced as a means to compile ASL data into historical summaries useful to Kuskokwim Area fishery managers, contributing project leaders, and other interested parties. This report provides (1) an overview of projects that collected ASL information in 2013, and highlights new data added to the AYKDBMS (Arctic-Yukon-Kuskokwim Database Management System), (2) a single source document for project specific data summaries produced in 2013, (3) a historical summary of ASL data for select long-term monitoring projects, and (4) a quick reference guide to the available historical ASL data archived in the AYKDBMS. During the 2013 season, ASL samples were collected from 16 projects including commercial catch, subsistence catch, escapement, and test fisheries. Sampling during the 2013 seasons resulted in 20,488 salmon sampled for age, sex, or length. Chum salmon *O. keta* made up 48% of the samples collected, followed by sockeye salmon *O. nerka* (24%), coho salmon *O. kisutch* (15%), and Chinook salmon *O. tshawytscha* (13%).

Key words: Pacific salmon *Oncorhynchus* spp., age, sex, length ASL, age class composition, sex composition, length composition, Arctic-Yukon-Kuskokwim Database Management System AYKDBMS, Kuskokwim River.

INTRODUCTION

Since 1961, age, sex, and length (ASL) data have been collected from Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, sockeye *O. nerka*, and coho *O. kisutch* salmon returning to the Kuskokwim Management Area (Figure 1; Brannian et al. 2005). The Kuskokwim Area ASL sampling program collects data from salmon harvest and escapement monitoring projects operated throughout Kuskokwim River and Kuskokwim Bay. Standardized methods are used to collect ASL data (Eaton 2015) that can be used for a wide range of purposes including management evaluation, trend analysis, and brood table development.

ASL data are available from discontinuous time series of sample collections from commercial, subsistence, and sport harvests, escapement monitoring projects, test fisheries, mark–recapture studies, and other special projects. A variety of organizations including state, federal, tribal, and non-government groups have jointly funded and participated in the collection of Kuskokwim Area salmon ASL data. Primary data are archived in the Arctic-Yukon-Kuskokwim Database Management System[1] (AYKDBMS). The AYKDBMS is an online clearinghouse maintained by the Alaska Department of Fish and Game (ADF&G) and provides a public interface for querying and downloading data. Summarized data have formerly been reported in agency project reports and fisheries management reports. Since 1995, data have also been published by the ADF&G as part of the salmon ASL catalog for the Kuskokwim Area (Molyneaux and DuBois 1996, 1998, 1999; DuBois and Molyneaux 2000; Molyneaux and Folletti 2005, 2007; Molyneaux et al. 2006, 2008, 2009, 2010; Liller et al. 2013; Brodersen et al. 2013).

The 2013 ASL catalog format provides a single source document for all ASL data collected by ADF&G and partner organizations throughout the Kuskokwim Management Area. This document provides a general description of the methods used to collect ASL data (Eaton 2015) and a detailed description of data processing, analysis, and archiving. This document provides standardized data summaries for all projects that operated in 2013 and historical summaries for select long-term projects. This report format complements the AYKDBMS by providing a quick

[1] AYKDBMS [AYK Database Management System] Home Page. http://sf.adfg.state.ak.us/CommFishR3/WebSite/AYKDBMSWebsite/Default.aspx.

reference guide to the archived raw data by species, project type (e.g., harvest or escapement), project name, and year.

A total of 15 Kuskokwim Area projects collected ASL data from Chinook, chum, sockeye, and coho salmon in 2013 (Figure 1). Samples were collected from all salmon species harvested in commercial fisheries operated in the Kuskokwim River (District 1) and Kuskokwim Bay (Districts 4 and 5). With the exception of Kuskokwim River Chinook salmon, commercial harvest samples are assumed to be representative of the subsistence harvest because of similarity of gear and timing. For Chinook salmon, the gear types used by subsistence fishermen and the timing of subsistence fishing activities are very different compared to the current commercial fishery. Therefore, additional samples were collected from Chinook salmon harvested in the lower Kuskokwim River subsistence fishery where the majority of the total subsistence harvest occurs. Chinook and sockeye salmon were sampled from a test fishery that operated in the lower portion of the Kuskokwim River near Bethel. Samples collected from the test fishery are assumed to be reasonably representative of the total run. ASL data was collected for all salmon species monitored at 10 weirs located on select spawning tributaries. Weirs operated on the Kwethluk and Tuluksak rivers index salmon escapement to the lower portion of the Kuskokwim River. Weirs operated on the George and Tatlawiksuk rivers index salmon escapement to the middle portion of the Kuskokwim River. Weirs operated on the Salmon and Kogrukluk rivers index salmon escapement to the Aniak and Holitna rivers respectively. The Takotna River weir is used to index salmon escapement to the headwaters of the Kuskokwim River. The Telaquana River weir is used to index escapement of lake-spawning sockeye salmon. The Kanektok and Goodnews river weirs index salmon escapement to District 4 and 5, respectively in Kuskokwim Bay.

OBJECTIVES

The goal of this project was to process, compile, and analyze salmon scale, sex, and length samples collected in 2013 from Kuskokwim Area subsistence and commercial fisheries, test fishery, and escapement projects.

Specific objectives of this report were to:

1. Provide an overview of projects and methods used to collect ASL information in 2013;
2. Provide a single source document for all project ASL data summaries produced in 2013;
3. Provide a historical summary of annual ASL composition estimates for select long-term monitoring projects; and
4. Provide a quick reference guide to the available historical ASL data archived in the AYKDBMS.

METHODS

In 2013, ASL samples were collected from 16 projects. Target species differed by project type and location (Table 1). Project types included commercial catch, test fishery, subsistence catch, and escapement. Detailed operational and ASL collection methods are summarized in individual project reports (Table 2). Tables 3–6 provide a general overview of methods used to collect ASL data for each species by project, and highlight the differences between project types.

SAMPLE SIZE

A minimum sample size was determined for each species to achieve 95% confidence intervals no wider than ±10% ($\alpha = 0.05$ and $d = 0.10$; Bromaghin 1993) for all major age-sex combinations (Table 7). This minimum sample size was required to estimate the age-sex composition for any location or temporal strata of interest. For less abundant species (e.g., Chinook salmon) collecting the minimum number of samples was often not practical. In the event that the sample size was inadequate, we provided a simple summary of the samples collected.

SAMPLING STRATEGIES

Viewed from a fixed location, such as an escapement project or a fishing district, the ASL composition of an upstream-migrating salmon population often changes over the course of the season. The following are sampling strategies which were implemented to collect representative samples from the various project types.

Escapement Projects

ASL samples from Kuskokwim Area escapement monitoring projects were collected using weirs with an integrated trap. Weir designs and specifications varied by location, however, all weirs functioned as a complete barrier to upstream movement for target species. Target species passed upstream of the weir through a designated chute. A trap was integrated into the passage chute at the upstream side of the weir. The trap included an entrance and exit gate that could be manually closed to capture salmon for sampling.

Pulse sampling was used exclusively at Kuskokwim River escapement projects for chum, sockeye, and coho salmon. The pulse sampling method is a stratified sampling technique in which samples are collected over a 2–3 day period at least one time during the early, middle, and late portions of the run. Sample schedules were established preseason based on historical run timing at each project location. Generally, chum and sockeye sampling events were scheduled every 5–7 days, which resulted in approximately 4–5 sampling events throughout the run. At most projects, a minimum of 3 sample events were scheduled for coho salmon. Pulse sample schedules were adjusted as needed inseason to account for observed run abundance.

Daily sampling was used for Chinook salmon at Kuskokwim River escapement projects and for all species sampled at Kuskokwim Bay escapement projects. Daily sample goals were determined preseason by distributing the season total sample size proportional to historical run timing. Daily sample schedules were adjusted as needed inseason to account for observed run abundance.

Commercial Harvest

ASL samples from Kuskokwim Area commercial harvests were from drift gillnets with a mesh size no larger than 6 inches stretched. The proportion of each mesh size used during any given commercial opening is unknown. Similarly, the exact mesh size used to harvest fish sampled for ASL is unknown.

Grab sampling is a stratified sampling design that was used for all species harvested in Kuskokwim Area commercial fisheries: Districts 1, 4, and 5. We attempted to collect a minimum of 100 samples from Chinook, chum, sockeye, and coho salmon harvested during each commercial opener. Samples were from commercial fish deliveries made to the Coastal Villages

Seafood (CVS) processing plant in Platinum Alaska, which was the only commercial processor operating in 2013. Fish harvested by commercial fishermen were placed into large totes, where a single tote could contain the harvest from one fisherman or many. ADF&G staff informed CVS of the sampling priorities, and CVS staff selected enough fish totes to achieve the desired sample size. The selection of totes was opportunistic and was done in a way that minimized disruption to CVS operations.

Subsistence Harvest

Opportunistic sampling was used to collect samples from the Kuskokwim River Chinook salmon subsistence harvest. ADF&G partnered with Orutsaramuit Native Council to recruit and train subsistence fishermen to sample their own harvest and the harvest of others. Samplers were paid for each fish sampled. All interested individuals were encouraged to participate regardless of their fishing practices. Subsistence samplers were encouraged to sample from their entire harvest of Chinook salmon. We assumed that a sufficiently large pool of subsistence fishermen would adequately represent the range of fishing practices implemented in the subsistence fishery. Furthermore, we assumed the resulting samples adequately represent the total subsistence harvest in the lower Kuskokwim River.

In 2013, a total of 17 subsistence samplers participated in the program (Table 8). Samples were collected from harvests representing 6 communities. Samples collected from Chinook salmon subsistence harvests were from gillnets with mesh that ranged in size from 4 inch to 8 1/4 inch (Table 9).

Bethel Test Fishery

Census sampling was conducted for Chinook and sockeye salmon harvested in the Bethel Test Fishery. We attempted to collect ASL samples from all fish harvested. Samples from Chinook salmon harvested in the test fishery were taken with 5 3/8 inch and 8 inch mesh drift gillnets. Samples from sockeye salmon harvested in the test fishery were from 4 5/8 inch and 5 3/8 inch drift gillnets.

AGE, SEX AND LENGTH SAMPLING PROCEDURES

To the extent practicable sampling procedures were standardized across all projects (Eaton 2015; Tables 3–6). Scales were collected from the left side of the fish approximately two rows above the lateral line in an area crossed by a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Because of the high rate of scale regeneration (i.e., lost and regrown) among Chinook and coho salmon, three scales were collected from each fish. Only one scale per fish was collected from chum salmon. The number of scales collected from each sockeye salmon differed by project (Table 5), with more scales collected from locations where reabsorption (i.e., deterioration of the outer scale edge) is prolific. The sex of each salmon sampled was verified by visual examination of the gonads (harvest projects) or visual examination of external characteristics (escapement projects). Fish length was measured from the mideye to tail fork (MEF) to the nearest millimeter using a straight edge measuring device.

AGE ESTIMATION

Age was estimated from scales. Scales were mounted on gummed cards and impressions were made in cellulose acetate (Clutter and Whitesel 1956). Scale impressions were magnified using a

microfiche reader with a 15mm, 48x, F/2.8 lens. Trained scale agers estimated total age by counting the number of annuli in the freshwater and saltwater zones. Annulus was defined as a concentration and interruption in the growth pattern of the ridges (circuli) on the upper surface of the anterior field of the scale (Mosher 1969). Typically, annuli presented as 3 or more tightly spaced and broken circuli that appear to cross over each other. Freshwater age was estimated for all scales that had less than 10mm of regeneration around the scale focus. Saltwater age was estimated for all scales that had at least some portion the outer edge of the scale visible. Total age was reported in European notation (Koo 1962); numerals preceding the decimal refer to the number of freshwater annuli and numerals following the decimal refer to the number of marine annuli. Total age from time of egg deposition, or brood year, is the sum of these two numbers plus one to account for incubation time.

ESTIMATES OF AGE, SEX, AND LENGTH COMPOSITION

Samples were used to estimate the ASL composition of the escapement or harvest, when adequate sample sizes were available and sampling occurred in proportion to abundance. Generally, it was not possible to collect samples in proportion to abundance, due to imperfect knowledge of the abundance and timing of escapement or harvest. Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection (Tables 10–13).

The number of salmon sampled (n) during stratum i with a valid age and sex determination were used to estimate the proportion of the stratum composition by age, sex, and age/sex category. Let c equal any age or sex category of interest. The proportion (p) of the total abundance (N) in stratum i which belonged to each category (c) was estimated as:

$$\hat{p}_{c,i} = n_{c,i} / n_i \,. \tag{1}$$

The percent of the season total abundance that belonged to each category ($\hat{p}_c$) was estimated from the weighted average across all strata as:

$$\hat{p}_c = \frac{1}{N} \sum_i N_i \hat{p}_{c,i} \,. \tag{2}$$

The variance ($\hat{V}$) of the season total percentage by category was estimated as:

$$\hat{V}(\hat{p}_c) = \frac{1}{N^2} \sum_i N_i^2 \hat{V}(\hat{p}_{c,i}) \,, \tag{3}$$

where:

$$\hat{V}(\hat{p}_{c,i}) = \left(\frac{N_i - n_i}{N_i} \right) \left(\frac{\hat{p}_{c,i}(1 - \hat{p}_{c,i})}{n_i - 1} \right). \tag{4}$$

Confidence intervals (95%) around the percent composition for each category were calculated as:

$$1.96 * \sqrt{\hat{V}(\hat{p}_c)} * 100. \tag{5}$$

The season total abundance by category ($\hat{N}_c$) was estimated as the sum of all strata estimates $\left(\hat{N}_{c,i}\right)$ as:

$$\hat{N}_c = \sum_i \hat{N}_{c,i}\,, \tag{6}$$

where:

$$\hat{N}_{c,i} = \hat{p}_{c,i} N_i\,. \tag{7}$$

Seasonal mean length by sex and age category was estimated using all salmon samples (n) with a valid age, sex, and length. Let $y_{c,i,j}$ equal the length of the fish (j) in any age/sex category (c), sampled during stratum (i). The mean length of fish in any age/sex category ($\bar{y}_{c,i}$) was estimated as:

$$\bar{y}_{c,i} = \frac{\sum_j y_{c,i,j}}{n_{c,i}}\,. \tag{8}$$

Seasonal mean length by age/sex category was estimated as:

$$\bar{y}_c = \frac{1}{N_c}\sum_i N_{c,i}\bar{y}_{c,i}\,, \tag{9}$$

with a variance of:

$$\hat{V}(\bar{y}_c) = \frac{1}{N_c^2}\sum_i N_{c,i}^2 \hat{V}(\bar{y}_{c,i})\,, \tag{10}$$

where:

$$\hat{V}(\bar{y}_{c,i}) = \left(\frac{\sum_j (y_{c,i,j} - \bar{y}_{c,i})^2 \Big/ \left(n_{c,i} - 1\right)}{n_{c,i}} \right). \tag{11}$$

Standardized data summaries were produced for all projects (Table 1). Each summary table consists of 2 parts. The top portion presents the age and sex composition, and the bottom portion presents length summaries for each age and sex class. In the event that sample sizes or timing were not adequate to estimate ASL composition, a summary of the samples collected is presented.

HISTORICAL DATA SUMMARIES

Historical ASL data summaries were produced for select projects as a convenient way to compile foundational data needed for additional analysis, such as development of brood tables. Each summary table presents total abundance, percent by age and sex, and mean length (mm MEF) for each project year. Annual estimates of ASL composition prior to 2010 were obtained from Molyneaux et al. 2010, with the exception of Chinook salmon subsistence harvest compositions which were recalculated in 2011 based on data archived in the AYKDBMS. Abundance

information was obtained from multiple sources: commercial harvest data from Brazil et al. 2011 and the Statewide electronic fish ticket database[2] (ADF&G); subsistence harvest estimates from Carroll and Hamazaki 2012 and Shelden et al. 2015; and escapement data on file with the ADF&G Kuskokwim Research Group.

ARCHIVING

Raw data forms, scale cards, and acetate impressions are archived in the Alaska Department of Fish and Game, Anchorage Regional Office. ASL data are archived in the AYKDBMS.

USER GENERATED REPORTS

ASL data are publicly accessible through the AYKDBMS. By following the "Search" link on the main database page, users are directed to a series of data filters that allow for focused searches by management area, data type, project type, and method type. An alphabetical list of all projects and associated date ranges that meet the user defined search criteria is available by selecting the "Go to Projects" link. Selection of a specific project yields a general project description and annual year notes that provide context (i.e., metadata) regarding the type, quality, quantity, and utility of the data available. ASL data for a specific project are available by selecting the "ASL" link and selecting from the range of years of available data. A report is generated with all associated data for each fish sampled, including information about data collection (e.g., date of sample, location, method of capture, method of sex determination, etc.), archival references (i.e., scale card number and fish number), and primary biological data such as fresh water age, saltwater age, sex, and length.

RESULTS

A total of 20,488 salmon were sampled for age, sex, or length during the 2013 season. Chum salmon made up 48% of the samples collected, followed by sockeye salmon (24%), coho salmon (15%), and Chinook salmon (13%). Nearly all projects attempted to collect paired age, sex, and length data from each fish. Although age samples were collected for majority of fish sampled, not all fish could be successfully aged (Table 14–17).

Some scale samples could not be aged for at least 1 of 7 different reasons Tables 18–21. Overall, the percentage of Chinook, chum, sockeye, and coho salmon scales that were not successfully aged were 31%, 33%, 30%, and 15% respectively. Regenerated scales was the primary reason Chinook (n = 513, 66%) and coho salmon samples (n = 407, 92%) could not be aged. Reabsorbed scales was the primary reason chum (n = 1,897, 59%) and sockeye salmon samples (n = 1,017, 70%) could not be aged. Although less common, reabsorbed Chinook salmon and regenerated chum and sockeye scales were prolific throughout the 2013 collections. All sockeye salmon scales collected at Kogrukluk, Salmon River (Aniak), and Telaquana River showed considerable reabsorption. Consequently, saltwater age was not summarized for these samples; however, minimum saltwater age estimates are archived in the AYKDBMS. Presentation of age errors was intended as feedback to project leaders but may also be useful when considering sample sizes needed to achieve desired statistical accuracy and precision.

[2] ADF&G (Alaska Department of Fish and Game). Statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK: ADF&G, Division of Commercial Fisheries. (cited September 10, 2012). [URL not publically available as some information is confidential].

ASL data collected in 2013 were summarized by project for each salmon species sampled (Table 1). Chinook salmon summaries include commercial harvest composition for 2 Kuskokwim Bay subdistricts (Table 22 and 23), one test fishery operated near Bethel (Table 24), subsistence harvest composition from the lower Kuskokwim River (Table 25 and 26), 2 escapement monitoring weirs operated in tributaries that drain into Kuskokwim Bay (Tables 27 and 28), and 7 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 29–35). Chum salmon summaries include commercial harvest composition for one Kuskokwim River (Table 36) and 2 Kuskokwim Bay subdistricts (Table 37 and 38), 2 escapement monitoring weirs operated in tributaries that drain into Kuskokwim Bay (Table 39 and 40), and 7 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 41–47). Sockeye salmon summaries include commercial harvest composition for one Kuskokwim River (Table 48) and 2 Kuskokwim Bay subdistricts (Table 49 and 50), one test fishery operated near Bethel (Table 51), 2 escapement monitoring weirs operated in tributaries that drain into Kuskokwim Bay (Table 52 and 53), 5 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 54–58). Coho salmon summaries include commercial harvest composition for one Kuskokwim River (Table 59) and 2 Kuskokwim Bay subdistricts (Table 60 and 61), one escapement monitoring weir operated in a tributary that drains into Kuskokwim Bay (Table 62), and 7 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 63–69).

HISTORICAL DATA SUMMARIES

Historical summaries were produced for select projects. Historical ASL data summaries for Chinook salmon include commercial harvest composition from one Kuskokwim River (Table 70) and 2 Kuskokwim Bay (Table 71 and 72) subdistricts, one test fishery near Bethel (Table 73), subsistence harvest composition from the lower Kuskokwim River (Table 74), 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Table 75 and 76), and 6 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 77–82). Historical ASL summaries for chum salmon include commercial harvest composition from one Kuskokwim River (Table 83) and 2 Kuskokwim Bay (Table 84 and 85) subdistricts, 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Table 86 and 87), and 6 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 88–93). Historical ASL summaries for sockeye salmon include commercial harvest composition from one Kuskokwim River (Table 94) and 2 Kuskokwim Bay (Table 95 and 96) subdistricts, 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Table 97 and 98), and 2 escapement monitoring weirs operated in lower Kuskokwim River tributaries (Table 99 and 100). Historical ASL summaries for coho salmon include commercial harvest composition from one Kuskokwim River (Table 101) and 2 Kuskokwim Bay (Table 102 and 103) subdistricts, one escapement monitoring weir project located on a tributary that drains into Kuskokwim Bay (Table 104), and 6 escapement monitoring weirs operated in tributaries throughout the lower, middle, and upper Kuskokwim River (Tables 105–110). Historical summaries were not produced for short-term special projects (e.g., tagging studies) or long-term projects with inconsistent sampling (e.g., test fisheries).

KUSKOKWIM AREA AGE, SEX, AND LENGTH DATA IN THE AYKDBMS

The goal of the AYKDBMS is to provide managers, researchers, and the public involved in fisheries in the AYK Region with a system to enter and process new data, as well as to retrieve historical data. The AYKDBMS provides access to Kuskokwim Area project descriptions and biological measurements of salmon age, sex, and length. For each salmon species, we provided a comprehensive list of all Kuskokwim Area projects that have collected salmon ASL data and highlighted the years for which at least some data are available (Tables 111–114). These overview tables provide a quick reference for agency staff and members of the public who may be interested in Kuskokwim Area ASL data for independent research but are unfamiliar with the scope of the data available. The AYKDBMS contains Chinook salmon ASL data collected from 27 different projects (Table 111), chum salmon data from 24 projects (Table 112), sockeye salmon data from 26 projects (Table 113), and coho salmon data from 19 projects (Table 114). For each salmon species, ASL data are available from a range of project types including commercial catch, subsistence catch, escapement monitoring, mark–recapture experiments, and test fisheries. The length and continuity of the time series of available data varies considerably within and between project types (Tables 111–114).

DISCUSSION

SOURCES OF BIAS

Users of Kuskokwim Area ASL data are responsible for ensuring that all data used are appropriate for the intended purpose. Since 1961, numerous changes have occurred regarding how fisheries and fisheries monitoring projects are executed, including how ASL data are collected, processed, and analyzed. Examples of differences between project types or between years at the same project include: (1) changes in harvest regulation including time, area, and gear restrictions; (2) changes in capture methods including weir picket spacing and gillnet dimensions and mesh sizes; (3) differences in length measurement methods including cloth tape, hard rulers, fish cradles, and calipers; (4) changes in method used to sex fish including using internal or external characteristics; (5) changes in staff responsible for collection and processing ASL samples; and (6) changes in study design including assumptions and sample size requirements. Prospective users are encouraged to review the original reports or other sources to understand the methods used for specific ASL data collections, including any changes in methodology. Previous versions of the Kuskokwim Area ASL catalog also provide some examples of bias and data quality concerns (e.g., Molyneaux et al. 2010).

DATA QUALITY IN AYKDBMS

The AYKDBMS was populated with data archived in a variety of formats, including paper data forms, digital scan forms, spreadsheets, and other database programs. Considerable care was taken to reduce transcription errors during the data upload process. However, most of the Kuskokwim Area ASL data in the AYKDBMS have not been reviewed for errors. As such, we acknowledge that some unknown level of data transcription errors, incorrect labeling, and erroneous data may exist in the database. ADF&G stock biologists, who regularly use the database, generally agree that fewer errors exist for data collected after 2000. Earlier data should be used with caution, and if a data quality concern exists, users are encouraged to contact agency staff for assistance.

The AYKDBMS provides project leaders with tools for archiving metadata. To date, the level of metadata available for database users is not sufficient. Kuskokwim Area ADF&G staff provides general project descriptions, methods, and project year notes in the AYKDBMS. However, the AYKDBMS does not currently provide details regarding aging or methods for estimating ASL composition. Users of the database should review annual project reports or consult ADF&G staff for information regarding data collection and limitations.

2013 AGING

Aging Kuskokwim Area salmon scales is difficult. A variety of scale patterns can be seen amongst fish of the same age, and scale quality often deteriorates as mature fish travel from marine environments to distant freshwater spawning locations. The true age of sampled fish is not known with certainty, and in 2013 experienced scale agers applied standard techniques to estimate age from Kuskokwim Area salmon scales. Scale samples collected near the mouth of the Kuskokwim River and Kuskokwim Bay are generally higher quality compared to more distant spawning locations where scales may be missing a portion of the overall age information. As a result, in 2013, scale agers spent considerable time aging salmon harvested in marine and lower river commercial fisheries to learn common scale patterns. Knowledge of scale patterns was then used to make informed estimates of total age from scales collected at escapement locations.

Consistency in aging among agers and over time is critical if estimates of age composition are to be compared. An extensive quality control process was implemented in 2013 to ensure that age estimates were reproducible. A percentage of the entire sample for each species and location was aged twice. The actual percentage of scales that was re-aged was based on the size and complexity of the project being reviewed. Percent agreement was evaluated and used as a metric of consistency, and disagreements were evaluated for patterns that would indicate inconsistent aging. In addition, age composition was estimated separately using first and second round ages and compared. Inconsistencies in the total age composition were reviewed and appropriate measures were implemented to reach consensus.

A total of 949 Chinook salmon was re-aged for quality control, which represented an average of 44% of each project (range: 14%–70%). Percent agreement averaged 84%, although majority of the disagreements were related to decisions to age or not age the scale. When both agers assigned an age, the percent agreement was 96%. Estimates of total age composition were similar between first and second round ages. Only the Tatlawiksuk River weir samples were notably different and required additional review to ensure consist interpretation of scale patterns. The 2013 scale agers noted some minor difficulty when differentiating between age-1.3 and age-1.4 Chinook salmon. Some age-1.3 fish had particularly large scales with unusually fast growth associated with the last saltwater annulus. In addition, some age-1.3 fish displayed a false annulus following the second saltwater annulus, which gave the initial appearance that the fish was age-1.4. A similar false annulus was identified on some scales after the third saltwater annulus, which made some age-1.4 fish appear to be age-1.5.

A total of 3,313 chum salmon was re-aged for quality control, which represented an average of 33% of each project (range: 21%–44%). Percent agreement averaged 80%, although majority of the disagreements were related to decisions to age or not age the scale. When both agers assigned an age, the percent agreement was 97%. Estimates of total age composition were similar between first and second round ages, although additional review was warranted for District W1

commercial harvest, Kwethluk, Tuluksak, and Takotna river weirs. Two agers worked together to review these projects and assigned ages by consensus. Agers noted that scale patterns were easy to interpret, however there was a general impression that scale quality was poor compared to prior years. Specifically, the outer edge of many scales was deteriorated. In 2013, Age-0.2 and age-0.5 chum salmon often had an annulus located very near to the outer margin of the scale. As a result even slight deterioration of outer edge could result in under aging. To mitigate the potential for under aging, our agers attempted to age only those scales with at least some portion of the true edge visible. This standard resulted in a large percentage of unaged scales which could underrepresent age-0.2 and age-0.5 chum salmon.

Aging sockeye salmon was particularly challenging in 2013. The outer edge of the scales collected from Kogrukluk, Salmon, and Telaquana river weirs were very deteriorated and saltwater age could not be estimated reliably. For these samples, only freshwater age was shown in this report and a minimum age was documented in the AYKDBMS. Based on the observed scale patterns, we expect that minimum ages are likely biased low by one year. A total of 1,429 sockeye salmon was re-aged for quality control, which represented an average of 45% of each project (range: 25%–100%). When both agers assigned an age, the percent agreement was 90%. Majority of the disagreement was associated with differentiating between freshwater age-1 and age-2. This disagreement is particularly notable, given the relatively high percent of freshwater age-2 sockeye salmon observed at many projects in 2013. Sockeye salmon scale experts from Bristol Bay were consulted, and it was determined that age estimates by Kuskokwim staff were reasonable. Although the percent agreement for individual scales was relative low, estimates of total age composition were very similar between first and second round ages.

A total of 904 coho salmon was re-aged for quality control, which represents an average of 27% of each project (range: 17%–38%). When both agers assigned an age, the percent agreement was 95%. Agers noted that coho salmon scale patterns were generally easy to interpret, and only called attention to 2 recurring patterns. Some scales had what appeared to be 2 tightly spaced annuli which required extra consideration to differentiate between freshwater age-1 and age-2 fish. Other freshwater age-2 scales had an unusually large growth zone after the second freshwater annulus, which gave the appearance that the fish may be freshwater age-3. Compared to prior years, freshwater age-3 was more common in 2013 at some locations. Agers reviewed freshwater age-3 scales closely and only assigned that age when annuli were evenly spaced and there were clear indications that 3 annuli were present. In most cases, the first annulus for freshwater age-3 scales was very close to the scale focus.

ACKNOWLEDGEMENTS

The USFWS OSM provided funding support for Project 10-303 through the Fisheries Resource Monitoring Program under agreement number 70181AJ028. That project supports processing, analyzing, archiving, and reporting of salmon ASL data collected in the Kuskokwim Area. In addition, many of the individual projects that collected ASL data were partially funded through the Fisheries Resource Monitoring Program. Coastal Villages Seafood provided partial funding for Kuskokwim Bay escapement monitoring and assisted agency staff with commercial sampling efforts. We would like to acknowledge the many technicians from ADF&G, Kuskokwim Native Association, Takotna Tribal Association, Orutsaramuit Native Council, and US Fish and Wildlife Service who participated in salmon monitoring activities. We thank Larry Dubois for aging assistance. We thank Toshihide Hamazaki and Jordan Palmer for their assistance with data

analysis. We also thank Tracy Hansen, Davin Taylor, and Brittany Blain for providing estimates of escapement. Jan Conitz provided ADF&G Regional review of this document and Donald Rivard provided review for the USFWS OSM.

REFERENCES CITED

Brazil, C., D. Bue, H. Carroll, and T. Elison. 2011. 2010 Kuskokwim area management report. Alaska Department of Fish and Game, Fishery Management Report No. 11-67, Anchorage.

Brannian, L. K., S. Darr, H. A. Krenz, S. StClair, and C. Lawn. 2005. Development of the Arctic-Yukon-Kuskokwim salmon database management system through June 30, 2005. Alaska Department of Fish and Game, Special Publication No. 05-10, Anchorage.

Brodersen, A. B., Z. W. Liller, and C. L. Truesdale. 2013. Salmon age, sex, and length catalog for the Kuskokwim Area, 2012. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 13-07, Anchorage.

Bromaghin, J. F. 1993. Sample size determination for interval estimation of multinomial probabilities. The American Statistician 47(3):203–206.

Carroll, H. C., and T. Hamazaki. 2012. Subsistence salmon harvests in the Kuskokwim area, 2008 and 2009. Alaska Department of Fish and Game, Fishery Data Series No. 12-35, Anchorage.

Clutter, R., and L. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bulletin of the International North Pacific Fisheries Commission 9, Westminster, British Columbia, Canada.

DuBois, L., and D. B. Molyneaux. 2000. Salmon age, sex and length catalog for the Kuskokwim area, 1999 progress report. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A00-18, Anchorage.

Eaton, S. M. 2015. Salmon age, sex, and length (ASL) sampling procedures for the Arctic-Yukon-Kuskokwim Region. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A15-04, Anchorage.

INPFC (International North Pacific Fisheries Commission). 1963. Annual report, 1961. International North Pacific Fisheries Commission, Vancouver, British Columbia.

Koo, T. S. Y. 1962. Age designation in salmon. Pages 37-48 [*In*]: T. S. Y. Koo, editor, Studies of Alaska red salmon. University of Washington Press, Seattle, Washington.

Liller, Z. W., A. B. Brodersen, and J. L. Clark. 2013. Salmon age, sex, and length catalog for the Kuskokwim Area, 2010 and 2011. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A13-01, Anchorage.

Mosher, K. H. 1969. Identification of Pacific salmon and steelhead trout by scale characteristics. United States Department of the Interior, United States Fish and Wildlife Service, Bureau of Commercial Fisheries, Circular 317, Washington, D.C.

Molyneaux, D. B., and L. DuBois. 1996. Salmon age, sex and length catalog for the Kuskokwim area, 1995 progress report. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A96-31, Anchorage.

Molyneaux, D. B., and L. DuBois. 1998. Salmon age, sex and length catalog for the Kuskokwim area, 1996–1997 progress report. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A98-15, Anchorage.

Molyneaux, D. B., and L. DuBois. 1999. Salmon age, sex and length catalog for the Kuskokwim area, 1998 progress report. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A99-15, Anchorage.

Molyneaux, D. B., and D. Folletti. 2005. Salmon age, sex, and length catalog for the Kuskokwim Area, 2004. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A05-03 Anchorage.

REFERENCES CITED (Continued)

Molyneaux, D. B., and D. L. Folletti. 2007. Salmon age, sex, and length catalog for the Kuskokwim Area, 2006. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A07-09, Anchorage.

Molyneaux, D. B., D. L. Folletti, and C. A. Shelden. 2006. Salmon age, sex, and length catalog for the Kuskokwim Area, 2005. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A06-01, Anchorage.

Molyneaux, D. B., D. L. Folletti, and A. R. Brodersen. 2008. Salmon age, sex, and length catalog for the Kuskokwim Area, 2007. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A08-05, Anchorage.

Molyneaux, D. B., A. R. Brodersen, and C. A. Shelden. 2009. Salmon age, sex, and length catalog for the Kuskokwim Area, 2008. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A09-06, Anchorage.

Molyneaux, D. B., A. R. Brodersen, and C. A. Shelden. 2010. Salmon age, sex, and length catalog for the Kuskokwim Area, 2009. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A10-05, Anchorage.

Shelden, C. A., T. Hamazaki, M. Horne-Brine, R. Chavez, and R. Frye. 2015. Subsistence salmon harvests in the Kuskokwim Area, 2013. Alaska Department of Fish and Game, Fishery Data Series No. 15-22, Anchorage.

TABLES AND FIGURES

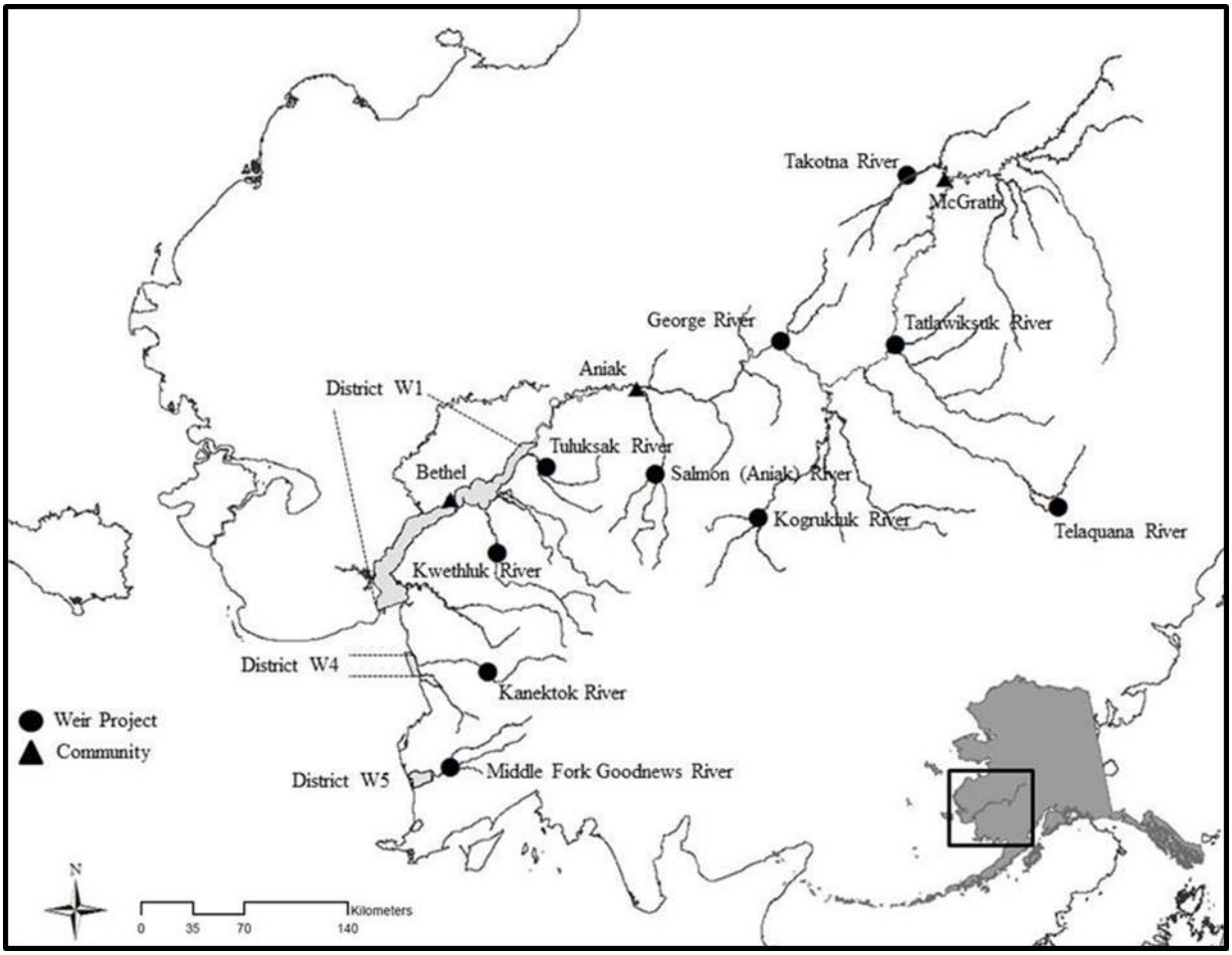

Figure 1 Projects locations where ASL data were collected in 2013.

Table 1.–Projects and salmon species for which age, sex, and length data were collected in 2013.

Project Type	Location	River km	Species			
			Chinook	Sockeye	Chum	Coho
Commercial Catch	W1 (Subdistrict 1)	- [a]		X	X	X
	W4 (Subdistrict 4)	- [b]	X	X	X	X
	W5 (Goodnews Bay Subdistrict)	- [c]	X	X	X	X
Test Fishery	Bethel - Subdistrict W1A (Above Bethel)	111	X	X		
Subsistence Catch	Lower Kuskokwim River	- [d]	X			
	Middle Kuskokwim River	- [e]	X			
Escapement	Goodnews River (Middle Fork)	- [f]	X	X	X	X
	Kanektok River	- [g]	X	X	X	
	Kwethluk River	216	X	X	X	X
	Tuluksak River	248	X	X	X	X
	Salmon River (Aniak)	404	X	X	X	X
	George River	453	X		X	X
	Tatlawiksuk River	568	X		X	X
	Kogrukluk River	710	X	X	X	X
	Telaquana River	772		X		
	Takotna River	835	X		X	X

Note: X designates that samples were collected. All escapement projects were weirs. Harvest and test fisheries used gillnets of variable mesh size.

[a] District W1 is located in the lower Kuskokwim River and extends from the southernmost tip of Eek Island to Bogus Creek, a distance of 203 rkm.

[b] District W4 consists of Kuskokwim Bay between the mouth of Weelung Creek and the Arolik River.

[c] District W5 consists of Goodnews Bay.

[d] The lower Kuskokwim river consists of all waters between the Kuskokwim Bay and the Village of Tuluksak and approximates District W1.

[e] The Middle Kuskokwim river consists of all waters from just below the Village of Lower Kalskag to the Village of Chuathbaluk.

[f] Flows into Goodnews Bay.

[g] Flows into Kuskokwim Bay and District W4.

Table 2.–Reporting status and contact persons for salmon monitoring projects that collected ASL data from the Kuskokwim Area in 2013.

Project Type and Location	Report Status	Contact Person
Commercial Catch		
W1 (Subdistrict 1)	No report [a]	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
W4 (Subdistrict 4)	No report [a]	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
W5 (Goodnews Bay Subdistrict)	No report [a]	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Test Fishery	Published	Aaron Poetter, Kuskokwim Area Commercial Fisheries Management Biologist, ADF&G, Anchorage, Alaska.
Subsistence Catch		
Lower Kuskokwim River	[b]	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Middle Kuskokwim River	No report [a]	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Escapement		
Goodnews River (Middle Fork)	Published	Aaron Tiernan, Kuskokwim Area Commercial Fisheries Assistant Management Biologist, ADF&G, Anchorage, Alaska.
Kanektok River	Published	Aaron Tiernan, Kuskokwim Area Commercial Fisheries Assistant Management Biologist, ADF&G, Anchorage, Alaska.
Kwethluk River	Published	Ken Harper, Fishery Biologist, U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field Office, Kenai, Alaska.
Tuluksak River	Published	Ken Harper, Fishery Biologist, U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field Office, Kenai, Alaska.
Salmon River (Aniak)	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
George River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Tatlawiksuk River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Kogrukluk River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Takotna River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Telaquana River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.

[a] No annual report has been designated. Methods followed guidelines presented in the annual report *Salmon age, sex, and length catalog for the Kuskokwim Area*.

[b] Reporting for this project occurs every 4 years. The next multi-year report is scheduled for publication in 2016.

Table 3.–Summary of Chinook salmon age, sex, and length sampling methods by project, 2013.

Project Type	Location	Capture Gear		Sample Design					Length Measurement		Sexing		Scales per Fish
		Gillnet [a]	Weir	Census [b]	Daily [c]	Pulse [d]	Grab [e]	Opportunistic [f]	Caliper	Straight Edge [g]	External [h]	Internal [i]	Three
Commercial Catch	W4 (Subdistrict 4)	X					X		X			X	X
	W5 (Goodnews Bay Sub district)	X					X		X			X	X
Test Fishery	Bethel - subdistrict W1A (Above Bethel	X		X					X			X	X
Subsistence Catch	Lower Kuskokwim River	X						X		X		X	X
	Middle Kuskokwim River	X						X		X		X	X
Escapement	Goodnews River (Middle Fork)		X		X					X	X		X
	Kanektok River		X		X					X	X		X
	Kwethluk River		X			X				X	X		X
	Tuluksak River		X			X				X	X		X
	Salmon River (Aniak)		X		X					X	X		X
	George River		X		X					X	X		X
	Tatlawiksuk River		X		X					X	X		X
	Kogrukluk River		X		X					X	X		X
	Takotna River		X		X					X	X		X

Note: X designates the primary method used.

[a] Includes a range of mesh sizes.

[b] Intent was to sample all harvested fish

[c] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[d] Target sample goals were collected systematically over a short period of time throughout the duration of the migration.

[e] Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

[f] Samples were collected by self-selected subsistence fishermen who sampled opportunistically from their own harvest or the harvest of others.

[g] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[h] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

[i] Abdominal cavity was cut and visually inspected for gonads.

Table 4.–Summary of chum salmon age, sex, and length sampling methods by project, 2013.

Project Type	Location	Capture Gear		Sampling Type			Length Measurement		Sexing		Scales per Fish
		Gillnet [a]	Weir	Daily [b]	Pulse [c]	Grab [d]	Caliper	Straight Edge [e]	External [f]	Internal [g]	One
Commercial Catch	W1 (Subdistrict 1)	X				X	X			X	X
	W4 (Subdistrict 4)	X				X	X			X	X
	W5 (Goodnews Bay Subdistrict)	X				X	X			X	X
Escapement	Goodnews River (Middle Fork)		X	X				X	X		X
	Kanektok River		X	X				X	X		X
	Kwethluk River		X		X			X	X		X
	Tuluksak River		X		X			X	X		X
	Salmon River (Aniak)		X		X			X	X		X
	George River		X		X			X	X		X
	Tatlawiksuk River		X		X			X	X		X
	Kogrukluk River		X		X			X	X		X
	Takotna River		X		X			X	X		X

Note: X designates the primary method used.

[a] Includes a range of mesh sizes.

[b] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[c] Target sample goals were collected systematically over a short period of time throughout the duration of the migration.

[d] Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

[e] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[f] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

[g] Abdominal cavity was cut and visually inspected for gonads.

Table 5.–Summary of sockeye salmon age, sex, and length sampling methods by project, 2013.

Project Type	Location	Capture Gear		Sample Design				Length Measurement		Sexing		Scales per Fish	
		Gillnet [a]	Weir	Census [b]	Daily [c]	Pulse [d]	Grab [e]	Caliper	Straight Edge [f]	External [g]	Internal [h]	One	Three
Commercial Catch	W1 (Subdistrict 1)	X					X	X			X	X	
	W4 (Subdistrict 4)	X					X	X			X	X	
	W5 (Goodnews Bay Subdistrict)	X					X	X			X	X	
Test Fishery	Bethel - Subdistrict W1A (Above Bethel)	X		X				X			X		X
Escapement	Goodnews River (Middle Fork)		X		X				X	X			X
	Kanektok River		X		X				X	X		X	
	Kwethluk River		X			X			X	X			X
	Salmon River (Aniak)		X		X				X	X			X
	Kogrukluk River		X		X				X	X			X
	Telaquana River		X		X				X	X			X

Note: X designates the primary method used.

[a] Includes a range of mesh sizes.

[b] Intent was to sample all harvested fish.

[c] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[d] Target sample goals were collected systematically over a short period of time throughout the duration of the migration.

[e] Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

[f] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[g] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

[h] Abdominal cavity was cut and visually inspected for gonads.

Table 6.–Summary of coho salmon age, sex, and length sampling methods by project, 2013.

Project Type	Location	Capture Gear		Sample Design			Length Measurement		Sexing		Scales per Fish
		Gillnet [a]	Weir	Daily [b]	Pulse [c]	Grab [d]	Caliper	Straight Edge [e]	External [f]	Internal [g]	Three
Commercial Catch	W1 (Subdistrict 1)	X				X	X			X	X
	W4 (Subdistrict 4)	X				X	X			X	X
	W5 (Goodnews Bay Subdistrict)	X				X	X			X	X
Escapement	Goodnews River (Middle Fork)		X	X				X	X		X
	Kwethluk River		X		X			X	X		X
	Tuluksak River		X		X			X	X		X
	Salmon River (Aniak)		X		X			X	X		X
	George River		X		X			X	X		X
	Kogrukluk River		X		X			X	X		X
	Tatlawiksuk River		X		X			X	X		X
	Takotna River		X		X			X	X		X

Note: X designates the primary method used.

[a] Includes a range of mesh sizes.

[b] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[c] Target sample goals were collected systematically over a short period of time throughout the duration of the migration.

[d] Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

[e] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[f] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

[g] Abdominal cavity was cut and visually inspected for gonads.

Table 7.–Minimum sample size requirements for estimating salmon age, sex, and length composition in 2013.

Species	Number Categories [a]	Sample Size [b]	Adjusted Sample Size [c]	Age Classes [d]
Chinook	10	190	230	1.2, 1.3, 1.4, 1.5, and other
Sockeye	14	205	230	0.3, 1.2, 1.3, 2.2, 1.4, 2.3, and other
Chum	8	180	220	0.2, 0.3, 0.4, and 0.5
Coho	6	168	200	1.2, 2.1, and 3.1

[a] Age-sex categories.

[b] From Bromaghin 1993, $\alpha = 0.05$, $d = 0.1$. Does not include correction for small population size.

[c] Increased by approximately 20% to account for scales that could not be aged.

[d] Common age classes that make up at least 1% of historical average. Other category is comprised of all minor age classes which in aggregate generally account for <1% of historical average.

Table 8.–Sample collections by community residents used to represent the age, sex, and length composition of Chinook salmon harvested in lower Kuskokwim River subsistence fishery, 2013.

Location	River km	Number of Samplers	Harvests Sampled [a]	Sample Size [b]	Percent
Lower River					
Tuntutuliak	45	5	5	308	35.2%
Bethel	106	9	10	563	64.4%
Kwethluk	132	1	1	1	0.1%
Tuluksak	192	1	1	2	0.2%
Total		16	17	874	
Middle River[c]					
Kalskag	263	1	1	4	33.3%
Napaimute	359	1	1	8	66.7%
Total		1	2	12	

[a] Participants were encouraged to sample from as many households as possible.

[b] Sample sizes include Chinook salmon whose age could not be determined.

[c] A single volunteer sampled both middle river communities, not associated with study area. Samples were not used in analysis.

Table 9.–Percent of samples collected by gillnet mesh size in the lower Kuskokwim River Chinook salmon subsistence fishery, 2013.

Mesh Size [a]	Tuntutuliak (n=308)	Bethel (n=563)	Tuluksak (n=2)	Kwethluk (n=1)	Total (n=874)
Small					
4.0 inch	0.0%	0.2%	0.0%	0.0%	0.1%
6.0 inch	4.2%	7.8%	100.0%	0.0%	6.8%
Subtotal	4.2%	8.0%	100.0%	0.0%	6.9%
Intermediate	0.0%	0.0%	0.0%	0.0%	0.0%
7.0 inch	0.0%	0.7%	0.0%	100.0%	0.6%
7.5 inch	0.0%	14.4%	0.0%	0.0%	9.3%
Subtotal	0.0%	15.1%	0.0%	100.0%	9.8%
Large	0.0%	0.0%	0.0%	0.0%	0.0%
8.0 inch	20.8%	71.8%	0.0%	0.0%	53.5%
8.125 inch	39.0%	0.0%	0.0%	0.0%	13.7%
8.25 inch	12.3%	0.0%	0.0%	0.0%	4.3%
Subtotal	72.1%	71.8%	0.0%	0.0%	71.6%
Unknown	23.7%	5.2%	0.0%	0.0%	11.7%

[a] Drift and set gillnets combined.

Table 10.–Postseason stratification used to account for disproportionate sampling of Chinook salmon at age, sex, and length monitoring projects in the Kuskokwim Area, 2013.

Project Location	Stratum	Sample Size	Escapement / Harvest	Stratum Dates	Sample Dates
W-4 Commercial	1	126	325	7/02	7/02
	2	63	670	7/06	7/06
	3	68	1,059	7/10-8/23	7/10
W-5 Commercial	1	106	495	6/28-8/23	7/02, 7/06, 7/10
Bethel Test Fishery [a]	5.4 inch	64	95		6/09, 6/10, 6/12–6/30, 7/03, 7/04, 7/06, 7/08, 7/12, 7/13
	8.0 inch	82	106		6/08, 6/10, 6/11, 6/13, 6/14, 6/16–7/11, 7/14, 7/15
Subsistence Catch [ab]	≤6.0 in	45			6/11, 6/13–6/16, 6/19, 6/27, 6/21, 6/24, 6/27
	> 6.0 in and < 8.0 in	58			6/10, 6/11, 6/15, 6/16–6/20, 6/22, 6/24,
	≥ 8.0 in	419			6/10–6/15, 6/17–6/27,
	Unknown	73			6/10–6/28,
George River [b]	1	85			6/27, 7/01, 7/12–7/14, 7/16–7/23, 7/25, 7/26, 7/28
Goodnews River	1	34	393	6/26-7/16	7/02, 7/03, 7/05, 7/08–7/10, 7/12, 7/13, 7/15
Middle Fork	2	77	420	7/17-7/22	7/17–7/22
	3	64	376	7/23-9/03	7/23–8/03, 8/05, 8/20
Kanektok River	1	59	1,082	6/27-7/16	7/02–7/17
	2	52	1,314	7/17-7/23	7/18–7/23
	3	42	1,173	7/24-8/15	7/24–8/01, 8/4, 8/5
Kogrukluk River [b]	1	61			7/06, 7/07, 7/10, 7/13–7/17, 7/19–7/26
Kwethluk River [b]	1	38			7/06, 7/07, 7/09, 7/11, 7/18, 7/20, 7/22, 7/24–7/28, 8/01–8/03, 8/05, 8/08, 8/13
Salmon River (Aniak) [b]	1	76			7/10, 7/13–7/15, 7/18, 7/20–7/24, 7/27, 7/30–8/02
Takotna River [b]	1	10			7/07, 7/12, 7/13, 7/18, 7/24, 7/28
Tatlawiksuk River [b]	1	66			6/28, 7/04, 7/06–7/14, 7/16, 7/18–7/24, 7/27
Tuluksak River [b]	1	7			7/07, 7/09, 7/12, 7/13

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] Samples were stratified by gillnet mesh size.

[b] Sample size and/or distribution was not sufficient. Only a summary of the samples was generated for this project.

Table 11.–Postseason stratification used to account for disproportionate sampling of chum salmon at age, sex, and length monitoring projects in the Kuskokwim Area, 2013.

Project Location	Stratum	Sample Size	Escapement / Harvest	Stratum Dates	Sample Dates
W-1B Commercial	1	93	24,823	7/16	7/16
	2	103	27,412	7/19-8/23	7/19
W-4 Commercial	1	208	18,979	7/02-7/06	7/06
	2	169	17,989	7/10-7/12	7/10, 7/12
	3	186	11,609	7/15-7/17	7/15, 7/17
	4	104	9,502	7/19-8/23	7/19
W-5 Commercial	1	198	4,771	6/29-7/06	7/06
	2	205	3,529	7/10-7/12	7/10, 7/12
	3	191	2,667	7/15-7/17	7/15, 7/17
	4	188	1,684	7/19-8/23	7/19, 7/22
George River	1	97	5,922	6/20-7/08	6/29, 7/01, 7/04–7/06
	2	161	13,302	7/09-7/16	7/12–7/14
	3	142	13,746	7/17-7/25	7/20, 7/22, 7/23
	4	147	3,904	7/26-9/15	7/28–8/02
Goodnews River Middle Fork	1	253	11,983	6/25-7/19	7/02–7/06, 7/08–7/11, 7/13–7/16, 7/18
	2	241	16,108	7/20-9/18	7/22–7/26, 7/29, 7/30, 8/03, 8/07, 8/20
Kanektok River	1	217	14,380	6/25-7/13	6/26–6/28, 7/02, 7/03, 7/08–7/13
	2	150	13,240	7/14-7/21	7/14–7/21
	3	206	15,420	7/22-8/15	7/22–8/07
Kogrukluk River	1	98	7,979	6/29-7/11	7/06, 7/07, 7/10
	2	312	25,052	7/12-7/19	7/13–7/15, 7/17, 7/18
	3	135	28,597	7/20-7/26	7/21–7/23
	4	66	5,206	7/27-9/12	7/31–8/02, 8/04
Kwethluk River	1	23	913	6/25-7/17	7/04, 7/06, 7/09
	2	135	6,568	7/18-7/25	7/18, 7/20-7/22, 7/24
	3	51	6,526	7/26-7/31	7/28-7/31
	4	108	2,283	8/1-8/6	8/01-8/06, 8/08, 8/09, 8/12, 8/13, 8/15
Salmon River (Aniak)	1	153	2,401	6/26-7/14	7/07, 7/10, 7/12
	2	142	1,413	7/15-7/19	7/17, 7/18
	3	136	1,949	7/20-7/25	7/22–7/24
	4	129	1,052	7/26-8/01	7/27–7/31
	5	93	851	8/02-9/17	8/03–8/07, 8/10–8/12
Takotna River	1	132	766	6/25-7/07	7/03–7/06
	2	294	2,675	7/08-7/18	7/09–7/11, 7/15–7/17
	3	127	1,986	7/19-7/25	7/21–7/23
	4	111	985	7/26-9/15	7/28–7/31
Tatlawiksuk River	1	135	3,674	6/20–7/6	7/02–7/04
	2	123	2,443	7/7-7/10	7/08–7/10
	3	141	18,166	7/11-7/20	7/14, 7/16, 7/18
	4	134	7,994	7/21-9/8	7/25–7/28
Tuluksak River	1	104	1,263	6/30-7/11	7/07–7/09
	2	107	1,719	7/12-7/17	7/14, 7/15
	3	100	5,610	7/18-7/25	7/21, 7/22
	4	106	3,204	7/26-8/01	7/28–7/30
	5	59	524	8/02-8/8	8/04–8/06
	6	64	591	8/9-9/10	8/11–8/15, 8/18, 8/19

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

Table 12.–Postseason stratification used to account for disproportionate sampling of sockeye salmon at age, sex, and length monitoring projects in the Kuskokwim Area, 2013.

Project Location	Stratum	Sample Size	Escapement / Harvest	Stratum Dates	Sample Dates
W-1B Commercial	1	183	768	7/16-8/13	7/16
W-4 Commercial	1	186	11,897	7/02-7/06	7/06
	2	208	7,152	7/10-7/12	7/10, 7/12
	3	104	3,305	7/15-7/17	7/15
	4	103	4,039	7/19-7/23	7/19
W-5 Commercial	1	189	8,655	6/28-7/06	7/06
	2	191	7,618	7/10-7/12	7/10, 7/12
	3	171	3,135	7/15-7/17	7/15, 7/17
	4	184	5,113	7/19-8/23	7/19, 7/22
Bethel Test Fishery	4.6 inch	288	309	6/13-7/15	6/13–7/12, 7/15
	5.4 inch	403	441	6/13-7/28	6/13–7/13, 7/15–7/17, 7/19–7/21
Goodnews River Middle Fork	1	151	12,172	6/24-7/04	7/01–7/04
	2	474	11,071	7/05-9/18	7/05–7/06, 7/08–7/25
Kanektok River	1	245	43,382	6/25-7/08	6/26–6/29, 7/02–7/08
	2	177	43,447	7/09-7/14	7/09–7/14
	3	179	41,932	7/15-8/15	7/15–8/01
Kogrukluk River	1	49	2,436	7/01-7/15	7/07, 7/10, 7/13–7/15
	2	48	2,640	7/16-7/20	7/16–7/20
	3	62	2,806	7/21-9/06	7/21–7/26, 8/02
Kwethluk River [a]	1	3			706, 7/09, 8/12
Salmon River (Aniak)	1	56	443	7/09-8/03	7/26–8/03
	2	110	523	8/04-8/25	8/04–8/07, 8/10–8/14, 8/16–8/19
Telaquana River	1	50	9,584	7/07-7/11	7/09, 7/10
	2	114	8,656	7/12-7/17	7/14–7/16
	3	52	5,211	7/18-7/20	7/18, 7/19
	4	103	3,229	7/21-7/26	7/23, 7/24
	5	41	1,126	7/27-8/06	7/29, 7/30
Tuluksak River [a]	1	6			7/07, 7/08, 7/14, 7/21

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] Sample size and/or distribution was not sufficient. Only a summary of the samples was generated for this project.

Table 13.–Postseason stratification used to account for disproportionate sampling of coho salmon at age, sex, and length monitoring projects in the Kuskokwim Area, 2013.

Project Location	Stratum	Sample Size	Escapement / Harvest	Stratum Dates	Sample Dates
W-1B Commercial	1	176	45,165	7/16-8/06	7/30
	2	175	68,904	8/10-8/23	8/13
W-4 Commercial	1	127	11,773	7/12-8/16	8/12
	2	59	9,353	8/19-8/23	8/21
W-5 Commercial	1	163	12,662	7/12-8/16	8/14
	2	182	8,919	8/19-8/23	8/21, 8/23
George River	1	169	5,404	7/24-8/26	8/21–8/23
	2	106	8,490	8/27-9/20	8/31–9/02
Goodnews River Middle Fork [a]	1	132			8/19–8/22, 8/25–8/27
Kogrukluk River	1	165	7,744	7/30-8/30	8/24–8/27
	2	181	15,846	8/31-9/25	9/04–9/06
Kwethluk River [a]	1	147			7/25, 7/27–8/06, 8/08, 8/09, 8/12, 8/13, 8/15
Salmon River (Aniak)	1	113	844	7/30-8/28	8/19, 8/24–8/28
	2	77	994	8/29-9/02	8/29–9/02
	3	77	1,031	9/03-9/20	9/04–9/12
Takotna River	1	168	1,396	8/04-8/25	8/18, 8/19, 8/21–8/24
	2	132	2,753	8/26-9/20	8/28–9/02
Tatlawiksuk River	1	170	6,137	7/19-8/21	8/12–8/16, 8/18
	2	161	6,939	8/22-9/20	8/30-9/1
Tuluksak River [a]	1	236			7/28, 7/30, 7/31, 8/04–8/06, 8/11–8/15, 8/19, 8/20

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] Sample size and/or distribution was not sufficient. Only a summary of the samples was generated for this project.

Table 14.–Summary of Chinook salmon age, sex, and length samples collected from Kuskokwim Area projects, 2013.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W4 (Subdistrict 4)	321	257	322	322
	W5 (Goodnews Bay Subdistrict)	132	106	133	133
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	199	146	199	199
Subsistence Catch	Lower Kuskokwim River	873	608	853	862
	Middle Kuskokwim River	12	8	12	12
Escapement	Goodnews River (Middle Fork)	245	176	245	245
	Kanektok River	234	158	229	229
	Kwethluk River	71	38	71	71
	Tuluksak River	18	7	18	18
	Salmon River (Aniak)	104	76	104	104
	George River	110	85	111	111
	Tatlawiksuk River	143	66	142	142
	Kogrukluk River	136	61	136	136
	Takotna River	24	10	24	24
	Totals	2,622	1,802	2,599	2,608

Table 15.–Summary of chum salmon age, sex, and length samples collected from Kuskokwim Area projects, 2013.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W1 (Subdistrict 1)	230	196	230	230
	W4 (Subdistrict 4)	738	667	738	738
	W5 (Goodnews Bay Subdistrict)	916	782	916	916
Escapement	Goodnews River (Middle Fork)	636	505	624	624
	Kanektok River	726	593	703	703
	Kwethluk River	709	317	709	709
	Tuluksak River	976	540	975	975
	Salmon River (Aniak)	1,016	653	1,015	1,016
	George River	813	547	813	813
	Tatlawiksuk River	923	536	918	923
	Kogrukluk River	1,008	611	1,008	1,008
	Takotna River	1,146	677	1,130	1,129
	Totals	9,837	6,624	9,779	9,784

Table 16.–Summary of sockeye salmon age, sex, and length samples collected from Kuskokwim Area projects, 2013.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W1 (Subdistrict 1)	230	183	230	230
	W4 (Subdistrict 4)	700	602	699	700
	W5 (Goodnews Bay Subdistrict)	930	735	930	930
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	749	691	748	748
Escapement	Goodnews River (Middle Fork)	714	625	714	714
	Kanektok River	800	602	798	798
	Kwethluk River	22	3	22	22
	Tuluksak River	16	6	16	16
	Salmon River (Aniak)	193	166	193	193
	Kogrukluk River	168	159	168	168
	Telaquana River	376	362	376	374
	Totals	4,898	4,134	4,894	4,893

Table 17.–Summary of coho salmon age, sex, and length samples collected from Kuskokwim Area projects in 2013.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W1 (Subdistrict 1)	400	351	400	400
	W4 (Subdistrict 4)	233	191	228	233
	W5 (Goodnews Bay Subdistrict)	400	345	400	400
Escapement	Goodnews River (Middle Fork)	160	132	160	160
	Kwethluk River	178	147	178	178
	Tuluksak River	285	237	284	285
	George River	317	275	317	317
	Tatlawiksuk River	200	170	402	402
	Kogrukluk River	399	346	399	399
	Takotna River	373	313	357	357
	Totals	2,945	2,507	3,125	3,131

Table 18.–Aging errors for Chinook salmon scale samples collected in the Kuskokwim Management Area, 2013.

Project Type	Location	Age Samples	Number Age Errors	Age Errors	Absorbed [a]	Illegible [b]	Inverted [c]	Missing [d]	No Scale Collected [e]	Regenerated [f]	Wrong Species [g]
Commercial Catch	W4 (Subdistrict 4)	321	64	20%	1	4				59	
	W5 (Goodnews Bay Subdistrict)	132	26	20%		1				25	
Subsistence Catch	Lower Kuskokwim River	873	265	30%		31	3	1		191	1
	Middle Kuskokwim River	12	4	33%	2					2	
Escapement	George River	110	25	23%	9				1	15	
	Goodnews River (Middle Fork)	245	69	28%	31	2				36	
	Kanektok River	234	76	32%	44					32	
	Kogrukluk River	136	75	55%	39		1			35	
	Kwethluk River	71	33	46%	23	2				8	
	Salmon River (Aniak)	104	28	27%	14					14	
	Takotna River	24	14	58%	5					9	
	Tatlawiksuk River	143	77	54%	33	15		1		28	
	Tuluksak River	18	11	61%	3					8	
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	199	53	27%		2				51	
	Totals	2,622	820	31%	204	57	4	2	1	513	1

Note: More than one age error may apply to a single scale.

[a] Absorbed scales show deterioration along the outer edge and are missing age information necessary for estimating saltwater age.

[b] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[c] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper, and an impression cannot be made.

[d] Missing scales were collected, but fell off of the gummed card before an impression was made.

[e] No scale collected means that there were no acceptable scales on the fish for estimating age.

[f] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged.

[g] Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 19.–Aging errors for chum salmon scale samples collected in the Kuskokwim Management Area, 2013.

Project Type	Location	Number Sampled	Number Age Errors	Age Errors	Absorbed [a]	Illegible [b]	Inverted [c]	Missing [d]	No Scale Collected [e]	Regenerated [f]	Wrong species [g]
Commercial Catch	W1 (Subdistrict 1)	230	34	15%		2		1		28	3
	W4 (Subdistrict 4)	738	71	10%	1	4			5	59	2
	W5 (Goodnews Bay Subdistrict)	916	134	15%		8	1			122	3
Escapement	George River	813	266	33%	175	4	1	1	4	81	
	Goodnews River (Middle Fork)	636	131	21%	20	9	3	1		98	
	Kanektok River	726	133	18%	19	7			4	103	
	Kogrukluk River	1,008	397	39%	252	9	25	2		109	
	Kwethluk River	709	392	55%	297	16		3	1	75	
	Salmon River (Aniak)	1,016	363	36%	195	15	14	3	8	128	
	Takotna River	1,146	469	41%	374	13	1			81	
	Tatlawiksuk River	923	387	42%	270	9	11	3	2	92	
	Tuluksak River	976	436	45%	294	10		2	10	120	
	Totals	9,837	3,213	33%	1,897	106	56	16	34	1,096	8

Note: More than one age error may apply to a single scale.

[a] Absorbed scales show deterioration along the outer edge and are missing age information necessary for estimating saltwater age.

[b] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[c] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper, and an impression cannot be made.

[d] Missing scales were collected, but fell off of the gummed card before an impression was made.

[e] No scale collected means that there were no acceptable scales on the fish for estimating age.

[f] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged.

[g] Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 20.–Aging errors for sockeye salmon scale samples collected in the Kuskokwim Management Area, 2013.

Project Type	Location	Number Sampled	Number Age Errors	Age Errors	Absorbed [a]	Illegible [b]	Inverted [c]	Missing [d]	No Scale Collected [e]	Regenerated [f]	Wrong Species [g]
Commercial Catch	W1 (Subdistrict 1)	230	47	20%	25	5		2		14	1
	W4 (Subdistrict 4)	700	98	14%	28	3	1	2		53	11
	W5 (Goodnews Bay Subdistrict)	930	195	21%	35	13		4		139	4
Escapement	Goodnews River (Middle Fork)	714	89	12%	53	1				35	
	Kanektok River	800	198	25%	98	8	4	9	3	75	1
	Kogrukluk River	168	168	100%	168					9	
	Kwethluk River	22	19	86%	18					1	
	Salmon River (Aniak)	193	193	100%	193	7			1	17	
	Telaquana River	376	376	100%	376					14	
	Tuluksak River	16	10	63%	9			1			
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	749	58	8%	14	2	1		2	31	8
	Totals	4,898	1,451	30%	1,017	39	6	18	6	388	25

Note: More than one age error may apply to a single scale.

[a] Absorbed scales show deterioration along the outer edge and are missing age information necessary for estimating saltwater age.

[b] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[c] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper, and an impression cannot be made.

[d] Missing scales were collected, but fell off of the gummed card before an impression was made.

[e] No scale collected means that there were no acceptable scales on the fish for estimating age.

[f] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged.

[g] Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 21.–Aging errors for coho salmon scale samples collected in the Kuskokwim Management Area, 2013.

Project Type	Location	Age Samples	Number Age Errors	Age Errors	Illegible [a]	Inverted [b]	Missing [c]	No Scale Collected [d]	Regenerated [e]	Wrong Species [f]
Commercial Catch	W1 (Subdistrict 1)	400	49	12%			3		45	1
	W4 (Subdistrict 4)	233	42	18%	1		1	9	31	
	W5 (Goodnews Bay Subdistrict)	400	55	14%	2				53	
Escapement	George River	317	42	13%	1				41	
	Goodnews River (Middle Fork)	160	28	18%	1				27	
	Kogrukluk River	399	53	13%	2				51	
	Kwethluk River	178	31	17%	2			2	26	1
	Takotna River	320	53	17%	4		3		46	
	Tatlawiksuk River	373	60	16%			1		59	
	Tuluksak River	200	30	15%	2				28	
	Totals	2,980	443	15%	15		8	11	407	2

Note: More than one age error may apply to a single scale.

[a] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[b] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper, and an impression cannot be made.

[c] Missing scales were collected, but fell off of the gummed card before an impression was made.

[d] No scale collected means that there were no acceptable scales on the fish for estimating age.

[e] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged.

[f] Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 22.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the District W4 restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)															
			2010		2009		2009		2009		2008		2007		2007		2006		
			0.1		0.2		1.1		1.2		1.3		2.2		1.4		1.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/02, 7/06, 7/10	257	Male	16	0.8	18	0.9	5	0.3	397	19.3	503	24.5	5	0.3	288	14.0	3	0.1	1,234	60.1
		Female	0	0.0	0	0.0	0	0.0	0	0.0	258	12.6	0	0.0	544	26.5	18	0.9	820	39.9
		Total	16	0.8	18	0.9	5	0.3	397	19.3	760	37.0	5	0.3	832	40.5	21	1.0	2,054	100.0
		95% CI (± %)		1.4		1.5		0.3		5.6		7.0		0.3		7.0		1.0		0.3
		Male Mean Length	503		438		380		507		717		512		845		919			
		SE	-		-		16		11		15		40		16		-			
		Range	-		429-489		364-395		381-638		457-870		472-551		652-1,034		-			
		n	1		2		2		54		58		2		37		1			
		Female Mean Length	-		-		-		-		796		-		853		844			
		SE	-		-		-		-		15		-		8		10			
		Range	-		-		-		-		656-915		-		631-962		795-869			
		n	-		-		-		-		27		-		69		4			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 23.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)									
			2009		2008		2008		2007			
			1.2		0.4		1.3		1.4		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
7/02, 7/06, 7/10	106	Male	126	25.5	5	0.9	140	28.3	37	7.5	308	62.3
		Female	0	0.0	0	0.0	47	9.4	140	28.3	187	37.7
		Total	126	25.5	5	0.9	187	37.7	177	35.8	495	100.0
		95% CI (± %)		7.4		1.6		8.2		8.1		0.3
		Male Mean Length	535		872		689		863			
		SE	9		-		13		26			
		Range	456-636		-		562-861		736-962			
		n	27		1		30		8			
		Female Mean Length	-		-		808		838			
		SE	-		-		20		9			
		Range	-		-		661-890		742-933			
		n	-		-		10		30			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 24.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the Bethel test fishery by gillnet mesh size, 2013.

			Brood Year (Age)									
			2009		2008		2007		2006			
			1.2		1.3		1.4		1.5		Total	
Mesh Size	Sample Size		N	%	N	%	N	%	N	%	N	%
5.4 inch	64	Male	36	56.3	14	21.9	3	4.7	0	0.0	53	82.8
		Female	1	1.6	4	6.3	6	9.4	0	0.0	11	17.2
		Subtotal	37	57.8	18	28.1	9	14.1	0	0.0	64	100.0
		Male Mean Length	526		711		792		-			
		Range	446-615		601-900		734-870		-			
		n	36		14		3		-			
		Female Mean Length	612		731		865		-			
		Range	-		681-865		739-951		-			
		n	1		4		6		-			
8 inch	82	Male	1	1.2	22	26.8	20	24.4	0	0.0	43	52.4
		Female	0	0.0	13	15.9	23	28.0	3	3.7	39	47.6
		Subtotal	1	1.2	35	42.7	43	52.4	3	3.7	82	100.0
		Male Mean Length	538		751		828		-			
		Range	-		614-957		739-944		-			
		n	1		22		20		-			
		Female Mean Length	-		765		843		878			
		Range	-		623-823		764-920		840-910			
		n	-		13		23		3			
Total	146	Male	55	27.2	49	24.5	30	15.1	0	0.0	134	66.8
All Mesh		Female	1	0.7	23	11.3	39	19.2	4	1.9	67	33.2
Combined		Total	56	28.0	72	35.8	69	34.3	4	1.9	201	100.0
		95% CI (± %)		3.3		4.0		3.6		1.0		0.1
		Male Mean Length	526		734		823		-			
		Range	446-615		601-957		734-944		-			
		n	37		36		23		-			
		Female Mean Length	612		756		848		878			
		Range	-		623-865		739-951		840-910			
		n	1		17		29		3			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 25.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence gillnet fishery, 2013.

			Brood Year (Age)													
			2010		2009		2008		2007		2007		2006		2006			
	Sample		1.1		1.2		1.3		1.4		2.3		1.5		2.4		Total	
Sample Dates	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/10-6/28	595	Male	1	0.2	30	5.0	155	26.1	158	26.6	2	0.3	3	0.5	0	0.0	349	58.7
		Female	0	0.0	4	0.7	26	4.4	210	35.3	1	0.2	4	0.7	1	0.2	246	41.3
		Total	1	0.2	34	5.7	181	30.4	368	61.8	3	0.5	7	1.2	1	0.2	595	100.0
		Male Mean Length	377		559		723		784		687		805		-			
		Range	-		400-826		560-925		642-1030		630-743		720-926		-			
		n	1		30		154		157		2		3		-			
		Female Mean Length	-		705		789		842		728		858		750			
		Range	-		520-890		680-870		547-1010		-		780-900		-			
		n	-		4		26		210		1		4		1			

Note: Samples were collected by subsistence fishermen who sampled their own harvests or the harvests of others. Samples were from drift gillnets with unknown and known mesh sizes. Known mesh sizes ranged from 4.0 to 8.25 inches. ASL samples were not applied to the total harvest. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 26.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence fishery by gillnet mesh size, 2013.

			Brood Year (Age)															
			2010		2009		2008		2007		2007		2006		2006			
	Sample		1.1		1.2		1.3		1.4		2.3		1.5		2.4		Total	
Mesh Size	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Small	45	Male	0	0.0	11	24.4	16	35.6	5	11.1	0	0.0	0	0.0	0	0.0	32	71.1
≤6 in		Female	0	0.0	1	2.2	1	2.2	11	24.4	0	0.0	0	0.0	0	0.0	13	28.9
		Subtotal	0	0.0	12	26.7	17	37.8	16	35.6	0	0.0	0	0.0	0	0.0	45	100.0
		Male Mean Length	-		572		706		806		-		-		-			
		Range	-		510-650		630-800		658-1030		-		-		-			
		n	-		11		16		5		-		-		-			
		Female Mean Length	-		520		746		856		-		-		-			
		Range	-		-		-		720-1010		-		-		-			
		n	-		1		1		11		-		-		-			
Medium	58	Male	0	0.0	2	3.4	8	13.8	15	25.9	0	0.0	1	1.7	0	0.0	26	44.8
> 6 in and < 8 in		Female	0	0.0	1	1.7	2	3.4	29	50.0	0	0.0	0	0.0	0	0.0	32	55.2
		Subtotal	0	0.0	3	5.2	10	17.2	44	75.9	0	0.0	1	1.7	0	0.0	58	100.0
		Male Mean Length	-		613		725		783		-		926		-			
		Range	-		400-826		670-925		647-994		-		926-926		-			
		n	-		2		8		15		-		1		-			
		Female Mean Length	-		578		740		825		-		-		-			
		Range	-		-		685-795		547-926		-		-		-			
		n	-		1		2		29		-		-		-			

-continued-

Table 26.–Page 2 of 2.

Mesh Size	Sample Size		Brood Year (Age) 2010 1.1 N	%	2009 1.2 N	%	2008 1.3 N	%	2007 1.4 N	%	2007 2.3 N	%	2006 1.5 N	%	2006 2.4 N	%	Total N	%
Large	419	Male	1	0.2	12	2.9	106	25.3	123	29.4	2	0.5	1	0.2	0	0.0	245	58.5
≥ 8 in		Female	0	0.0	2	0.5	19	4.5	149	35.6	1	0.2	2	0.5	1	0.2	174	41.5
		Subtotal	1	0.2	14	3.3	125	29.8	272	64.9	3	0.7	3	0.7	1	0.2	419	100.0
		Male Mean Length	377		539		725		783		687		720		-			
		Range	377-377		440-600		590-910		642-985		630-743		-		-			
		n	1		12		105		122		2		1		-			
		Female Mean Length	-		860		794		848		728		900		750			
		Range	-		830-890		680-870		727-995		-		900-900		-			
		n	-		2		19		149		1		2		1			

Note: Samples were collected by subsistence fishermen who sampled their own harvests or the harvests of others. ASL samples were not applied to the total harvest. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 27.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Goodnews River (Middle Fork) weir, 2013.

			Brood Year (Age)													
			2010		2009		2008		2007		2006		2006			
			1.1		1.2		1.3		1.4		1.5		2.4		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/02, 7/03, 7/05, 7/08-7/10, 7/12, 7/13, 7/15, 7/17-8/03, 8/05, 8/20	175	Male	6	0.5	176	14.8	143	12.0	190	16.0	0	0.0	0	0.0	515	43.3
		Female	0	0.0	0	0.0	124	10.4	533	44.9	12	1.0	5	0.5	674	56.7
		Total	6	0.5	176	14.8	267	22.4	723	60.8	12	1.0	5	0.5	1,189	100.0
		95% CI (± %)		0.9		5.2		6.2		7.2		1.8		0.8		0.3
		Male Mean Length	380		522		753		865		-		-			
		SE	-		10		24		21		-		-			
		Range	-		421-650		564-866		726-1060		-		-			
		n	1		26		19		25		-		-			
		Female Mean Length	-		-		801		870		852		949			
		SE	-		-		11		5		-		-			
		Range	-		-		703-861		746-970		-		-			
		n	-		-		19		83		1		1			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 28.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Kanektok River weir, 2013.

			Brood Year (Age)											
			2009		2008		2007		2007		2006			
			1.2		1.3		1.4		2.3		1.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%
7/02-8/01, 8/04, 8/05	153	Male	1,210	33.9	750	21.0	277	7.7	18	0.5	0	0.0	2,255	63.2
		Female	46	1.3	168	4.7	1,071	30.0	0	0.0	28	0.8	1,314	36.8
		Total	1,256	35.2	919	25.7	1,348	37.8	18	0.5	28	0.8	3,569	100.0
		95% CI (± %)		7.5		6.8		7.6		1.0		1.5		0.3
		Male Mean Length	506		677		858		674		-			
		SE	7		16		28		-		-			
		Range	413-710		464-874		722-956		-		-			
		n	51		34		12		1		-			
		Female Mean Length	523		770		857		-		707			
		SE	-		30		7		-		-			
		Range	506-549		645-871		699-935		-		-			
		n	2		7		45		-		1			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 29.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon that escaped past the Kwethluk River weir, 2013.

			Brood Year (Age)									
			2009		2008		2007		2006			
			1.2		1.3		1.4		1.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
7/06, 7/07, 7/09, 7/11, 7/18, 7/20, 7/22, 7/24-7/28, 8/01-8/03	38	Male	9	23.7	3	7.9	7	18.4	0	0.0	19	50.0
		Female	1	2.6	3	7.9	14	36.8	1	2.6	19	50.0
		Total	10	26.3	6	15.8	21	55.3	1	2.6	38	100.0
		Male Mean Length	582		737		838		-			
		Range	485-785		675-780		795-985		-			
		n	9		3		7		-			
		Female Mean Length	510		720		882		885			
		Range	-		635-805		815-1005		-			
		n	1		3		14		1			

Note: Kwethluk weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. The weir experienced operational difficulties throughout much of the Chinook salmon escapement and some unknown number of fish may have passed unobserved. ASL samples were not applied to the observed escapement, due to small sample size. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 30.–Number of Kuskokwim Area Chinook salmon sampled at the Tuluksak River weir, 2013.

			Brood Year (Age)			
			2009	2008	2007	
Sample Dates	Sample Size		1.2	1.3	1.4	Total
7/07, 7/09, 7/12, 7/13	7	Male	3	2	0	5
		Female	0	0	2	2
		Total	3	2	2	7

Note: Tuluksak weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. Samples were not applied to the escapement.

Table 31.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Salmon River (Aniak) weir, 2013.

			Brood Year (Age)											
			2009		2008		2008		2008		2007		2006		
			1.2		0.4		1.3		2.2		1.4		1.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/10, 7/13-7/15, 7/18, 7/20-7/24, 7/27, 7/30, 7/31, 8/01, 8/02	76	Male	35	46.1	0	0.0	15	19.7	1	1.3	2	2.6	0	0.0	53	69.7
		Female	0	0.0	1	1.3	5	6.6	0	0.0	16	21.1	1	1.3	23	30.3
		Total	35	46.1	1	1.3	20	26.3	1	1.3	18	23.7	1	1.3	76	100.0
		Male Mean Length	528		-		684		579		833		-			
		Range	387-692		-		574-756		-		826-840		-			
		n	35		-		15		1		2		-			
		Female Mean Length	-		847		815		-		870		560			
		Range	-		-		760-887		-		640-1130		-			
		n	-		1		5		-		16		1			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 32.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon that escaped past the George River weir, 2013.

			Brood Year (Age)									
			2009		2008		2007		2006			
			1.2		1.3		1.4		1.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
6/27, 7/01, 7/12-7/14, 7/16-7/23, 7/25, 7/26, 7/28	85	Male	13	15.3	15	17.6	6	7.1	0	0.0	34	40.0
		Female	1	1.2	11	12.9	38	44.7	1	1.2	51	60.0
		Total	14	16.5	26	30.6	44	51.8	1	1.2	85	100.0
		Male Mean Length	499		699		838		-			
		Range	437-604		610-868		762-896		-			
		n	13		15		6		-			
		Female Mean Length	492		774		840		826			
		Range	-		739-816		680-933		-			
		n	1		11		38		1			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 33.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon that escaped past the Tatlawiksuk River weir, 2013.

			Brood Year (Age)									
			2009		2008		2007		2006			
			1.2		1.3		1.4		1.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
6/28, 7/04, 7/06-7/14, 7/16, 7/18-7/24, 7/27	66	Male	5	7.6	16	24.2	10	15.2	0	0.0	31	47.0
		Female	0	0.0	9	13.6	25	37.9	1	1.5	35	53.0
		Total	5	7.6	25	37.9	35	53.0	1	1.5	66	100.0
		Male Mean Length	544		704		747		-			
		Range	448-615		570-796		680-843		-			
		n	5		16		10		-			
		Female Mean Length	-		743		823		880			
		Range	-		690-800		591-960		-			
		n	-		9		25		1			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 34.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at Kogrukluk River weir, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			1.2		1.3		1.4		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/06, 7/07, 7/10, 7/13-7/17, 7/19-7/26	61	Male	15	24.6	13	21.3	3	4.9	31	50.8
		Female	1	1.6	9	14.8	20	32.8	30	49.2
		Total	16	26.2	22	36.1	23	37.7	61	100.0
		Male Mean Length	539		716		811			
		Range	462-622		618-832		785-851			
		n	15		13		3			
		Female Mean Length	533		785		884			
		Range	-		635-838		800-944			
		n	1		9		20			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 35.–Number of Kuskokwim Area Chinook salmon that escaped past the Takotna River weir, 2013.

			Brood Year (Age)			
			2009	2008	2007	
Sample Dates	Sample Size		1.2	1.3	1.4	Total
7/07, 7/12, 7/13, 7/18, 7/24, 7/28	10	Male	2	0	0	2
		Female	1	1	6	8
		Total	3	1	6	10

Note: ASL samples were not applied to the total escapement.

Table 36.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W1 restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/16, 7/19	196	Male	22,925	43.9	3,997	7.7	266	0.5	27,188	52.0
		Female	19,717	37.7	5,064	9.7	266	0.5	25,047	48.0
		Total	42,642	81.6	9,061	17.3	532	1.0	52,235	100.0
		95% CI (± %)		5.4		5.3		1.4		0.2
		Male Mean Length	560		569		529			
		SE	3		9		-			
		Range	478-610		498-616		-			
		n	86		15		1			
		Female Mean Length	545		559		600			
		SE	3		5		-			
		Range	491-607		510-584		-			
		n	74		19		1			

Note: All samples were collected in subdistrict 1A (i.e., above Bethel). Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 37.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)									
			2009		2008		2007		2006			
			0.3		0.4		0.5		0.6		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
7/06, 7/10, 7/12, 7/15, 7/17,7/19	667	Male	12,242	21.1	13,877	23.9	169	0.3	91	0.2	26,379	45.4
		Female	12,740	21.9	18,590	32.0	370	0.6	0	0.0	31,700	54.6
		Total	24,982	43.0	32,467	55.9	539	0.9	91	0.2	58,079	100.0
		95% CI (± %)		3.8		3.8		0.7		0.3		0.1
		Male Mean Length	567		593		597		566			
		SE	2		3		-		-			
		Range	496-660		499-689		577-608		-			
		n	143		158		2		1			
		Female Mean Length	545		565		569		-			
		SE	2		2		5		-			
		Range	486-621		496-651		554-596		-			
		n	149		209		5		-			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 38.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/06, 7/10, 7/12, 7/15, 7/17, 7/19, 7/22	782	Male	3,108	24.6	4,242	33.5	230	1.8	7,580	59.9
		Female	1,777	14.0	3,186	25.2	108	0.9	5,071	40.1
		Total	4,885	38.6	7,428	58.7	338	2.7	12,651	100.0
		95% CI (± %)		3.5		3.5		1.1		0.1
		Male Mean Length	568		589		588			
		SE	2		2		5			
		Range	483-718		513-670		517-638			
		n	201		256		16			
		Female Mean Length	548		565		580			
		SE	2		2		12			
		Range	483-607		498-622		543-622			
		n	111		191		7			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 39.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Goodnews River (Middle Fork) weir, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/02-7/06, 7/08-7/11, 7/13-7/16, 7/18,7/22-7/26, 7/29, 7/30, 8/03, 8/07, 8/20	494	Male	4,526	16.1	10,680	38.0	418	1.5	15,624	55.6
		Female	4,699	16.7	7,434	26.5	334	1.2	12,467	44.4
		Total	9,225	32.8	18,114	64.5	752	2.7	28,091	100.0
		95% CI (± %)		4.2		4.3		1.4		0.1
		Male Mean Length	586		606		641			
		SE	3		3		13			
		Range	503-663		502-798		605-730			
		n	82		193		8			
		Female Mean Length	551		570		566			
		SE	3		3		14			
		Range	499-603		493-693		528-615			
		n	77		129		5			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 40.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kanektok River weir, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
6/26-6/28, 7/02, 7/03, 7/06, 7/08-8/07	573	Male	6,315	14.7	16,551	38.5	750	1.7	23,616	54.9
		Female	4,859	11.3	13,722	31.9	843	2.0	19,424	45.1
		Total	11,175	26.0	30,273	70.3	1,592	3.7	43,040	100.0
		95% CI (± %)		3.6		3.7		1.6		0.1
		Male Mean Length	576		609		613			
		SE	3		3		5			
		Range	506-639		505-715		594-635			
		n	83		220		10			
		Female Mean Length	545		563		577			
		SE	4		2		9			
		Range	488-614		486-670		540-620			
		n	64		185		11			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 41.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kwethluk River weir, 2013.

			Brood Year (Age)									
			2009		2008		2007		2006			
			0.3		0.4		0.5		0.6		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
	317	Male	6,710	41.2	3,119	19.1	177	1.1	21	0.1	10,027	61.6
		Female	4,483	27.5	1,571	9.6	210	1.3	0	0.0	6,263	38.4
		Total	11,192	68.7	4,690	28.8	387	2.4	21	0.1	16,290	100.0
7/04, 7/06, 7/09, 7/18, 7/20-7/22, 7/24,7/28-8/06, 8/08, 8/09, 8/12, 8/13, 8/15		95% CI (± %)		6.0		5.9		1.9		0.2		0.2
		Male Mean Length	572		596		589		555			
		SE	3		5		19		-			
		Range	500-655		530-665		565-635		-			
		n	122		58		4		1			
		Female Mean Length	547		556		563		-			
		SE	3		4		2		-			
		Range	480-615		490-605		510-580		-			
		n	93		35		4		-			

Note: Kwethluk weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. The weir experienced operational difficulties throughout much of the chum salmon escapement and some unknown number of fish may have passed unobserved. ASL samples were applied to the observed escapement only. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 42.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Tuluksak River weir, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/07-7/09, 7/14, 7/15, 7/21, 7/22, 7/28-7/30, 8/04-8/06, 8/11-8/15, 8/18, 8/19	540	Male	3,399	26.4	4,548	35.3	181	1.4	8,128	63.0
		Female	2,279	17.7	2,427	18.8	60	0.5	4,766	37.0
		Total	5,678	44.0	6,975	54.1	241	1.9	12,894	100.0
		95% CI (± %)		5.1		5.1		1.3		0.1
		Male Mean Length	557		567		590			
		SE	4		3		29			
		Range	422-664		430-680		475-663			
		n	130		205		9			
		Female Mean Length	531		535		527			
		SE	4		4		3			
		Range	420-610		440-657		484-549			
		n	90		102		4			

Note: Tuluksak weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 43.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the George River weir, 2013.

			Brood Year (Age)									
			2010		2009		2008		2007			
			0.2		0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
6/29, 7/01, 7/04-7/06, 7/12-7/14, 7/20, 7/22, 7/23, 7/28-8/02	547	Male	97	0.3	6,200	16.8	9,938	27.0	323	0.9	16,558	44.9
		Female	123	0.3	7,415	20.1	12,571	34.1	206	0.6	20,316	55.1
		Total	220	0.6	13,615	36.9	22,510	61.0	529	1.4	36,874	100.0
		95% CI (± %)		0.7		4.2		4.2		1.1		0.1
		Male Mean Length	545		555		582		550			
		SE	0		3		3		1			
		Range	545-545		491-622		512-659		522-625			
		n	1		100		134		4			
		Female Mean Length	492		519		543		529			
		SE	0		3		2		0			
		Range	462-500		450-590		467-641		515-542			
		n	2		125		178		3			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 44.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Salmon River (Aniak) weir, 2013.

			Brood Year (Age)							
			2009		2008		2007			
			0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
	653	Male	3,506	45.7	2,464	32.1	236	3.1	6,206	81.0
		Female	714	9.3	690	9.0	56	0.7	1,460	19.0
7/07, 7/10, 7/12, 7/17, 7/18, 7/22-7/24, 7/27-7/31, 8/03-8/07, 8/10-8/12		Total	4,220	55.0	3,154	41.1	292	3.8	7,666	100.0
		95% CI (± %)		3.7		3.6		1.5		0.0
		Male Mean Length	562		577		579			
		SE	2		2		7			
		Range	469-650		502-656		497-624			
		n	321		201		19			
		Female Mean Length	534		564		568			
		SE	4		4		12			
		Range	471-599		516-618		546-608			
		n	57		50		5			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 45.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Tatlawiksuk River weir, 2013.

			Brood Year (Age)											
			2010		2009		2008		2007		2006			
			0.2		0.3		0.4		0.5		0.6		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%
7/02-7/04, 7/08-7/10, 7/14, 7/16, 7/18, 7/25-7/28	533	Male	27	0.1	5,966	18.5	9,699	30.0	389	1.2	60	0.2	16,141	50.0
		Female	0	0.0	6,971	21.6	8,850	27.4	315	1.0	0	0.0	16,136	50.0
		Total	27	0.1	12,937	40.1	18,549	57.5	705	2.2	60	0.2	32,277	100.0
		95% CI (± %)		0.2		5.0		5.0		1.4		0.4		0.1
		Male Mean Length	660		557		589		577		539			
		SE	0		4		3		10		0			
		Range	660-660		482-661		506-685		545-640		539-539			
		n	1		85		172		7		1			
		Female Mean Length	-		527		544		552		-			
		SE	-		4		3		4		-			
		Range	0-0		475-659		475-662		510-577		0-0			
		n	-		100		161		6		-			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 46.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kogrukluk River weir, 2013.

			Brood Year (Age)									
			2010		2009		2008		2007			
			0.2		0.3		0.4		0.5		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
7/06, 7/07, 7/10, 7/13-7/15, 7/17, 7/18, 7/21-7/23,7/31-8/02, 8/04	611	Male	0	0.0	19,095	28.6	15,995	23.9	454	0.7	35,544	53.2
		Female	80	0.1	17,889	26.8	13,320	19.9	0	0.0	31,290	46.8
		Total	80	0.1	36,984	55.3	29,316	43.9	454	0.7	66,834	100.0
		95% CI (± %)		0.2		4.3		4.3		0.7		0.1
		Male Mean Length	-		558		579		578			
		SE	-		2		3		10			
		Range	0-0		484-648		508-679		559-624			
		n	-		189		153		4			
		Female Mean Length	536		530		547		-			
		SE	0.00		2		3		-			
		Range	536-536		479-604		490-634		0-0			
		n	1		136		128		-			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 47.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Takotna River weir, 2013.

			Brood Year (Age)											
			2010		2009		2008		2007		2006			
			0.2		0.3		0.4		0.5		0.6		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%
7/03-7/06, 7/09-7/11, 7/15-7/17, 7/21-7/23, 7/28-7/31	664	Male	18	0.3	1,111	17.3	1,839	28.7	198	3.1	9	0.1	3,175	49.5
		Female	0	0.0	1,353	21.1	1,771	27.6	112	1.7	0	0.0	3,237	50.5
		Total	18	0.3	2,465	38.4	3,611	56.3	310	4.8	9	0.1	6,412	100.0
		95% CI (± %)		0.4		3.7		3.7		1.6		0.3		0.1
		Male Mean Length	504		557		572		563		566			
		SE	5		3		3		8		0			
		Range	499-508		484-652		470-662		501-637		566-566			
		n	2		111		194		20		1			
		Female Mean Length	-		531		542		537		-			
		SE	-		2		2		11		-			
		Range	0-0		462-590		464-603		483-606		0-0			
		n	-		131		193		12		-			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 48.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W1 restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)																	
			2009		2009		2008		2008		2007		2007		2007		2006		2006		
			0.3		1.2		1.3		2.2		1.4		2.3		3.2		2.4		3.3		Total	
Sample Date	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/16	183	Male	17	2.2	34	4.4	185	24.0	8	1.1	8	1.1	126	16.4	4	0.5	4	0.5	21	2.7	407	53.0
		Female	17	2.2	21	2.7	180	23.5	4	0.5	25	3.3	101	13.1	0	0.0	4	0.5	8	1.1	361	47.0
		Total	34	4.4	55	7.1	365	47.5	13	1.6	34	4.4	227	29.5	4	0.5	8	1.1	29	3.8	768	100.0
		95% CI (± %)		2.6		3.3		6.3		1.6		2.6		5.8		0.9		1.3		2.4		0.2
		Male Mean Length	578		510		573		521		589		575		520		604		563			
		SE	10		6		3		19		15		3		-		-		6			
		Range	549-593		487-546		536-620		502-539		574-604		527-605		-		-		545-578			
		n	4		8		44		2		2		30		1		1		5			
		Female Mean Length	543		498		545		524		552		543		-		584		540			
		SE	7		9		3		-		12		3		-		-		2			
		Range	522-554		476-514		470-583		-		494-573		523-568		-		-		538-542			
		n	4		5		43		1		6		24		-		1		2			

Note: All samples were collected in subdistrict 1B (i.e., below Bethel). Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 49.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)															
			2010		2009		2009		2008		2008		2008		2007		2007			
			1.1		0.3		1.2		0.4		1.3		2.2		1.4		2.3		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/06, 7/10, 7/12, 7/15, 7/19	601	Male	69	0.3	162	0.6	6,592	25.0	66	0.3	4,263	16.2	66	0.3	418	1.6	416	1.6	12,052	45.7
		Female	0	0.0	290	1.1	9,303	35.2	34	0.1	3,595	13.6	307	1.2	162	0.6	649	2.5	14,341	54.3
		Total	69	0.3	453	1.7	15,895	60.2	101	0.4	7,859	29.8	373	1.4	580	2.2	1,064	4.0	26,393	100.0
		95% CI (± %)		0.4		1.2		3.9		0.4		3.8		0.9		1.4		1.8		0.1
		Male Mean Length	316		583		517		599		571		441		576		580			
		SE	15		3		1		-		2		-		11		6			
		Range	301-331		577-593		441-569		577-620		486-617		413-472		538-619		562-607			
		n	2		3		153		2		90		2		7		7			
		Female Mean Length	-		542		494		572		537		490		559		541			
		SE	-		6		1		-		2		8		11		6			
		Range	-		523-556		437-560		-		446-573		469-508		540-580		482-568			
		n	-		5		230		1		76		7		3		13			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 50.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)																			
			2010		2009		2009		2008		2008		2007		2007		2007		2006		2006			
			0.3		1.2		0.4		1.3		2.2		1.4		2.3		2.4		3.3		3.4		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/06, 7/10, 7/12, 7/15, 7/17, 7/19, 7/22	735	Male	508	2.1	601	2.5	46	0.2	5,641	23.0	266	1.1	291	1.2	5,466	22.3	82	0.3	414	1.7	46	0.2	13,360	54.5
		Female	297	1.2	233	0.9	0	0.0	4,706	19.2	92	0.4	187	0.8	5,097	20.8	120	0.5	384	1.6	46	0.2	11,161	45.5
		Total	805	3.3	834	3.4	46	0.2	10,348	42.2	358	1.5	478	1.9	10,563	43.1	202	0.8	797	3.3	92	0.4	24,521	100.0
		95% CI (± %)		1.3		1.3		0.4		3.7		0.9		1.1		3.6		0.6		1.3		0.5		0.1
		Male Mean Length	563		512		567		570		529		590		571		575		571		599			
		SE	4		6		-		2		12		5		2		10		5		-			
		Range	534-600		470-540		-		507-616		492-570		560-602		498-618		532-591		540-604		-			
		n	14		18		1		164		8		7		167		3		13		1			
		Female Mean Length	537		496		-		542		518		566		546		552		533		560			
		SE	3		3		-		2		24		10		1		6		5		-			
		Range	523-552		473-514		-		475-601		494-541		545-581		490-588		533-586		434-576		-			
		n	11		9		-		138		2		5		157		4		12		1			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 51.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the Bethel test fishery, 2013.

			Brood Year (Age)																	
			2009		2009		2008		2008		2008		2007		2007		2006			
			0.3		1.2		0.4		1.3		2.2		1.4		2.3		1.5		Total	
Mesh Size	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
4.6" mesh	288	Male	3	1.0	38	12.2	0	0.0	50	16.3	3	1.0	6	2.1	6	2.1	0	0.0	107	34.7
		Female	9	2.8	10	3.1	1	0.3	156	50.3	2	0.7	8	2.4	17	5.6	0	0.0	202	65.3
		Subtotal	12	3.8	47	15.3	1	0.3	206	66.7	5	1.7	14	4.5	24	7.6	0	0.0	309	100.0
		Male Mean Length	556		447		-		567		457		596		567		-			
		Range	541-568		410-528		-		488-621		430-472		556-622		544-585		-			
		n	3		35		-		47		3		6		6		-			
		Female Mean Length	522		480		546		538		499		558		539		-			
		Range	481-553		445-501		-		493-585		493-504		505-583		494-565		-			
		n	8		9		1		145		2		7		16		-			
5.4" mesh	403	Male	4	1.0	7	1.5	0	0.0	129	29.3	0	0.0	19	4.2	10	2.2	1	0.2	170	38.5
		Female	13	3.0	4	1.0	0	0.0	220	49.9	0	0.0	25	5.7	9	2.0	0	0.0	271	61.5
		Subtotal	18	4.0	11	2.5	0	0.0	349	79.2	0	0.0	44	9.9	19	4.2	1	0.2	441	100.0
		Male Mean Length	571		477		-		572		-		601		571		340			
		Range	538-588		438-528		-		513-639		-		576-622		545-593		-			
		n	4		6		-		118		-		17		9		1			
		Female Mean Length	528		500		-		538		-		568		557		-			
		Range	510-547		494-506		-		327-594		-		519-661		533-588		-			
		n	12		4		-		201		-		23		8		-			
Total	691	Male	8	1.0	44	5.9	0	0.0	180	23.9	3	0.4	25	3.3	16	2.2	1	0.1	277	36.9
All Mesh Combined		Female	22	2.9	14	1.9	1	0.1	376	50.1	2	0.3	33	4.4	26	3.5	0	0.0	473	63.1
		Total	29	3.9	58	7.8	1	0.1	555	74.0	5	0.7	58	7.7	42	5.6	1	0.1	750	100.0
		95% CI (± %)		0.4		0.5		0.1		0.9		0.2		0.6		0.5		0.1		0.0
		Male Mean Length	564		451		-		571		457		600		569		340			
		Range	538-588		410-528		-		488-639		430-472		556-622		544-593		-			
		n	7		41		-		165		3		23		15		1			
		Female Mean Length	526		486		546		538		499		566		545		-			
		Range	481-553		445-506		-		327-594		493-504		505-661		494-588		-			
		n	20		13		1		346		2		30		24		-			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 52.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Goodnews River (Middle Fork) weir, 2013.

			Brood Year (Age)																	
			2010		2009		2009		2008		2008		2007		2007		2006		2006			
			0.2		0.3		1.2		1.3		2.2		1.4		2.3		2.4		3.3		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/01-7/06, 7/08-7/23	625	Male	23	0.1	47	0.2	558	2.4	5,151	22.2	47	0.2	798	3.4	2,528	10.9	463	2.0	533	2.3	10,147	43.7
		Female	0	0.0	382	1.6	1,013	4.4	7,049	30.3	673	2.9	683	2.9	2,449	10.5	151	0.6	696	3.0	13,096	56.3
		Total	23	0.1	429	1.8	1,571	6.8	12,200	52.5	719	3.1	1,481	6.4	4,977	21.4	613	2.6	1,229	5.3	23,243	100.0
		95% CI (± %)		0.2		1.3		2.0		4.6		1.5		2.4		3.7		1.6		2.1		0.1
		Male Mean Length	591		576		507		575		525		608		573		588		553			
		SE	-		16		5		2		35		2		2		4		10			
		Range	-		560-592		431-543		506-618		490-559		589-633		520-621		560-613		515-600			
		n	1		2		19		147		2		17		69		10		13			
		Female Mean Length	-		530		483		542		474		565		535		570		523			
		SE	-		5		3		1		10		7		2		3		4			
		Range	-		470-560		448-529		498-588		433-525		520-584		485-580		565-586		500-554			
		n	-		9		36		167		19		17		73		4		20			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 53.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Kanektok River weir, 2013.

			Brood Year (Age)													
			2009		2009		2008		2008		2007		2007			
			0.3		1.2		1.3		2.2		1.4		2.3		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/26-6/29,	601	Male	245	0.2	41,052	31.9	13,023	10.1	725	0.6	1,491	1.2	491	0.4	57,027	44.3
7/02-8/01		Female	0	0.0	50,477	39.2	18,675	14.5	725	0.6	1,611	1.3	245	0.2	71,734	55.7
		Total	245	0.2	91,530	71.1	31,698	24.6	1,450	1.1	3,101	2.4	736	0.6	128,761	100.0
		95% CI (± %)		0.4		3.6		3.4		0.9		1.2		0.6		0.1
		Male Mean Length	595		523		574		513		583		596			
		SE	-		2		3		22		14		7			
		Range	-		430-615		498-627		466-543		536-612		589-602			
		n	1		192		60		3		7		2			
		Female Mean Length	-		490		536		487		563		543			
		SE	-		2		3		4		4		-			
		Range	-		401-583		426-600		468-513		543-582		-			
		n	-		232		92		3		8		1			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 54.–Number of Kuskokwim Area sockeye salmon sampled at the Kwethluk River weir, 2013.

Sample Dates	Sample Size		Brood Year (Age) 2009 1.2	2008 1.3	Total
7/06, 7/09, 8/12	3	Male	1	2	3
		Female	0	0	0
		Total	1	2	3

Note: Kwethluk weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. The weir experienced operational difficulties throughout much of the sockeye salmon escapement and some unknown number of fish may have passed unobserved. ASL samples were not applied to the observed escapement.

Table 55.–Number of Kuskokwim Area sockeye salmon sampled at the Tuluksak River weir, 2013.

Sample Dates	Sample Size		Brood Year (Age) 2009 1.2	2008 1.3	2007 1.4	Total
7/07, 7/08, 7/14, 7/21	6	Male	0	0	0	0
		Female	1	3	2	6
		Total	1	3	2	6

Note: Tuluksak weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. Samples were not applied to the escapement.

Table 56.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Salmon River weir, 2013.

			Freshwater Age								Total	
			0		1		2		3			
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
7/26-8/07, 8/10-8/14, 8/16-8/19	166	Male	10	1.0	453	46.9	51	5.2	0	0.0	513	53.1
		Female	0	0.0	390	40.3	55	5.7	8	0.8	453	46.9
		Total	10	1.0	843	87.2	106	11.0	8	0.8	966	100.0
		95% CI (± %)		1.2		5.0		4.7		1.5		0.3
		Male Mean Length	559		562		555		-			
		SE	16		6		17		-			
		Range	543-574		396-700		399-602		-			
		n	2		76		8		-			
		Female Mean Length	-		541		522		484			
		SE	-		3		18		-			
		Range	-		482-625		335-571		-			
		n	-		70		9		1			

Note: Only freshwater ages are provided in this summary, because saltwater age could not be determined due to extensive reabsorption of the scale edge. Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 57.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon sampled at the Kogrukluk River weir, 2013.

Sample Dates	Sample Size		Freshwater Age 0 N	0 %	1 N	1 %	2 N	2 %	Total N	Total %
7/07, 7/10, 7/13-7/26, 8/02	159	Male	50	0.6	2,910	36.9	327	4.1	3,286	41.7
		Female	50	0.6	4,251	53.9	295	3.7	4,596	58.3
		Total	99	1.3	7,161	90.8	622	7.9	7,882	100.0
		95% CI (± %)		1.7		4.4		4.1		0.3
		Male Mean Length	602		575		572			
		SE	-		3		5			
		Range	-		539-648		545-601			
		n	1		60		7			
		Female Mean Length	573		537		537			
		SE	-		2		5			
		Range	-		480-591		514-548			
		n	1		84		6			

Note: Only freshwater ages are provided in this summary, because saltwater age could not be determined due to extensive reabsorption of the scale edge. Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 58.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Telaquana River weir, 2013.

			Freshwater Age							
			0		1		2		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/09, 7/10, 7/14-7/16, 7/18, 7/19, 7/23, 7/24, 7/29, 7/30	360	Male	0	0.0	8,446	30.4	2,784	10.0	11,230	40.4
		Female	135	0.5	13,401	48.2	3,041	10.9	16,576	59.6
		Total	135	0.5	21,847	78.6	5,824	20.9	27,806	100.0
		95% CI (± %)		0.6		5.1		5.1		0.2
		Male Mean Length	-		587		587			
		SE	-		5		7			
		Range	0-0		440-642		457-633			
		n	-		139		43			
		Female Mean Length	515		553		554			
		SE	0.00		2		5			
		Range	503-535		460-611		481-583			
		n	3		144		31			

Note: Only freshwater ages are provided in this summary, because saltwater age could not be determined due to extensive reabsorption of the scale edge. Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 59.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W1 restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/30, 8/13	351	Male	3,526	3.1	42,477	37.2	7,358	6.5	53,361	46.8
		Female	3,407	3.0	50,250	44.1	7,052	6.2	60,708	53.2
		Total	6,933	6.1	92,727	81.3	14,410	12.6	114,069	100.0
		95% CI (± %)		2.7		4.2		3.5		0.1
		Male Mean Length	553		556		550			
		SE	14		3		5			
		Range	506-619		430-639		481-600			
		n	10		134		26			
		Female Mean Length	558		565		561			
		SE	5		2		6			
		Range	541-577		474-654		498-609			
		n	9		152		20			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 60.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
8/12, 8/21	186	Male	1,086	5.1	9,711	46.0	344	1.6	11,140	52.7
		Female	278	1.3	8,954	42.4	754	3.6	9,986	47.3
		Total	1,364	6.5	18,665	88.3	1,098	5.2	21,126	100.0
		95% CI (± %)		3.3		4.6		3.4		0.3
		Male Mean Length	581		575		587			
		SE	7		5		12			
		Range	528-629		414-660		566-627			
		n	11		87		3			
		Female Mean Length	595		587		606			
		SE	19		3		7			
		Range	564-630		542-644		558-640			
		n	3		76		6			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 61.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤6 inch) commercial gillnet fishery, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
8/14, 8/21, 8/23	345	Male	311	1.4	9,366	43.4	613	2.8	10,290	47.7
		Female	331	1.5	10,384	48.1	576	2.7	11,291	52.3
		Total	642	3.0	19,750	91.5	1,189	5.5	21,581	100.0
		95% CI (± %)		1.9		3.1		2.5		0.1
		Male Mean Length	554		588		600			
		SE	27		3		15			
		Range	485-614		479-664		522-651			
		n	4		149		9			
		Female Mean Length	566		590		595			
		SE	6		2		11			
		Range	552-582		507-657		521-627			
		n	5		168		10			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 62.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Goodnews River (Middle Fork) weir, 2013.

			Brood Year (Age)									
			2010		2009		2008		2007			
			1.1		2.1		3.1		4.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
8/19-8/22, 8/25-8/27	132	Male	5	3.8	58	43.9	1	0.8	0	0.0	64	48.5
		Female	5	3.8	60	45.5	2	1.5	1	0.8	68	51.5
		Total	10	7.6	118	89.4	3	2.3	1	0.8	132	100.0
		Male Mean Length	550		597		590		-			
		Range	494-583		406-668		-		-			
		n	5		58		1		-			
		Female Mean Length	565		602		610		601			
		Range	542-585		488-665		600-620		-			
		n	5		60		2		1			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 63.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon that escaped past the Kwethluk River weir, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/25, 7/27-8/06, 8/08, 8/09, 8/12, 8/13, 8/15	147	Male	14	9.5	67	45.6	10	6.8	91	61.9
		Female	5	3.4	46	31.3	5	3.4	56	38.1
		Total	19	12.9	113	76.9	15	10.2	147	100.0
		Male Mean Length	548		559		565			
		Range	475-610		495-625		495-610			
		n	14		67		10			
		Female Mean Length	540		570		575			
		Range	510-560		465-615		545-595			
		n	5		46		5			

Note: Kwethluk weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. The weir experienced operational difficulties during the coho salmon escapement and was removed August 16; prior to the historical midpoint of the escapement. ASL samples were not applied to the observed escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 64.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Tuluksak River weir, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
7/28, 7/30, 7/31, 8/04-8/06, 8/11-8/15, 8/19, 8/20	236	Male	4	1.7	104	44.1	19	8.1	127	53.8
		Female	3	1.3	84	35.6	22	9.3	109	46.2
		Total	7	3.0	188	79.7	41	17.4	236	100.0
		Male Mean Length	529		528		531			
		Range	517-540		409-610		430-600			
		n	4		104		19			
		Female Mean Length	468		529		529			
		Range	432-493		430-596		430-614			
		n	3		84		22			

Note: Tuluksak weir is operated by USFWS. Summary was produced by ADF&G and may differ from estimates reported by USFWS. Samples were not applied to the escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 65.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Salmon River weir, 2013.

			Brood Year (Age)							
			2010		2009		2008			
	Sample		1.1		2.1		3.1		Total	
Sample Dates	Size		N	%	N	%	N	%	N	%
8/19, 8/24-9/02, 9/04-9/12	267	Male	163	5.7	1,656	57.7	309	10.8	2,128	74.2
		Female	67	2.3	482	16.8	192	6.7	741	25.8
		Total	230	8.0	2,138	74.5	501	17.5	2,869	100.0
		95% CI (± %)		3.3		5.2		4.4		0.1
		Male Mean Length	550		569		575			
		SE	6.97		2.60		4.54			
		Range	439-585		411-670		511-630			
		n	14		157		31			
		Female Mean Length	577		576		581			
		SE	9.45		4.24		3.91			
		Range	548-607		508-613		536-612			
		n	5		42		18			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 66.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon that escaped past the George River weir, 2013.

			Brood Year (Age)									
			2010		2009		2008		2007			
			1.1		2.1		3.1		4.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
8/21-8/23, 8/31-9/02	275	Male	192	1.4	4,658	33.5	2,001	14.4	0	0.0	6,851	49.3
		Female	545	3.9	4,098	29.5	2,369	17.0	32	0.2	7,043	50.7
		Total	737	5.3	8,756	63.0	4,370	31.4	32	0.2	13,894	100.0
		95% CI (± %)		3.2		6.3		6.0		0.4		0.2
		Male Mean Length	533		558		562		-			
		SE	11		4		8		-			
		Range	519-545		432-642		431-636		-			
		n	3		93		40		-			
		Female Mean Length	567		563		571		545			
		SE	17		4		5		0			
		Range	488-617		481-615		485-621		545-545			
		n	8		80		50		1			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 67.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Tatlawiksuk River weir, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
8/12, 8/13, 8/14, 8/15, 8/16, 8/18, 8/30, 8/31, 9/01	331	Male	310	2.4	5,956	45.6	720	5.5	6,986	53.4
		Female	86	0.7	5,248	40.1	756	5.8	6,090	46.6
		Total	396	3.0	11,204	85.7	1,476	11.3	13,076	100.0
		95% CI (± %)		1.8		3.8		3.4		0.1
		Male Mean Length	535		571		565			
		SE	18.98		2.72		10.15			
		Range	455-602		390-625		430-616			
		n	8		152		18			
		Female Mean Length	559		566		577			
		SE	21.00		3.07		6.83			
		Range	538-580		405-708		520-615			
		n	2		132		19			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 68.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Kogrukluk River weir, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
8/24-8/27, 9/04-9/06	346	Male	222	0.9	8,832	37.4	860	3.6	9,915	42.0
		Female	491	2.1	11,496	48.7	1,689	7.2	13,675	58.0
		Total	713	3.0	20,328	86.2	2,549	10.8	23,590	100.0
		95% CI (± %)		1.9		3.8		3.4		0.1
		Male Mean Length	543		537		566			
		SE	6		3		10			
		Range	495-563		418-600		414-609			
		n	3		138		14			
		Female Mean Length	554		552		572			
		SE	9		2		5			
		Range	508-584		441-617		483-600			
		n	7		161		23			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 69.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon that escaped past the Takotna River weir, 2013.

			Brood Year (Age)							
			2010		2009		2008			
			1.1		2.1		3.1		Total	
Sample Dates	Sample Size		N	%	N	%	N	%	N	%
8/18, 8/19, 8/21-8/24, 8/28-9/02	300	Male	29	0.7	1,816	43.8	121	2.9	1,966	47.4
		Female	0	0.0	1,958	47.2	225	5.4	2,183	52.6
		Total	29	0.7	3,774	91.0	346	8.3	4,149	100.0
		95% CI (± %)		1.0		3.5		3.3		0.2
		Male Mean Length	474		547		522			
		SE	0.00		3		10			
		Range	459-511		429-751		470-595			
		n	2		134		10			
		Female Mean Length	-		555		556			
		SE	-		2		3			
		Range	0-0		443-610		522-584			
		n	-		139		15			

Note: Samples were used to estimate total number and percent of escapement by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 70.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W1 commercial gillnet fishery, 1964–2013.

Year	Sample Size	Total Harvest	Percent by Age Class												Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1964	535	17,149	0.0	0.0	0.5	0.0	19.6	1.0	58.8	4.3	9.0	6.8	0.0	0.0	52.8	911
1965	322	21,989	0.0	0.0	0.0	0.0	43.4	0.0	27.5	5.0	12.8	9.4	0.0	1.9	45.1	884
1966	468	25,545	0.0	0.0	0.2	0.0	12.4	0.0	85.1	0.0	2.3	0.0	0.0	0.0	50.3	911
1967	654	29,986	0.0	0.0	0.1	0.0	8.2	0.0	74.4	0.0	17.3	0.0	0.0	0.0	55.8	880
1968	540	34,278	0.0	0.0	3.9	0.0	25.1	0.0	49.2	2.0	19.0	0.8	0.0	0.0	42.6	848
1969 [a]		43,997														
1970 [a]		39,290														
1971	791	40,274	0.0	0.0	2.9	0.1	23.0	0.0	73.3	0.0	0.7	0.0	0.0	0.0	53.0	865
1972	500	39,454	0.0	0.0	0.0	0.0	20.3	0.0	74.7	0.0	5.0	0.0	0.0	0.0	50.4	877
1973	470	32,838	0.0	0.0	2.3	0.0	25.7	0.0	65.4	0.0	6.6	0.0	0.0	0.0	55.3	857
1974 [b]	42	18,664														
1975 [b]	307	22,135														
1976 [a]		30,735														
1977	234	35,830	0.0	0.0	0.7	0.0	31.2	0.0	65.3	0.0	2.8	0.0	0.0	0.0	36.3	836
1978	289	45,641	0.0	0.0	0.2	0.0	12.8	0.0	82.2	0.0	4.8	0.0	0.0	0.0	58.2	856
1979 [b]	302	38,966														
1980	273	35,881	0.0	0.0	10.9	0.0	65.1	0.0	20.7	0.0	3.2	0.0	0.0	0.0	29.0	759
1981	467	47,663	0.0	0.0	7.7	0.0	40.5	0.0	48.5	0.0	3.3	0.0	0.0	0.0	39.0	794
1982	715	48,234	0.0	0.3	10.4	0.0	23.2	0.0	63.1	0.0	2.8	0.1	0.0	0.0	41.1	791
1983	1,255	33,174	0.0	1.5	21.1	0.0	19.5	0.0	52.2	0.0	5.1	0.6	0.0	0.0	36.8	812
1984	664	31,742	0.0	0.7	12.3	0.1	39.0	0.4	36.7	1.3	8.1	1.4	0.0	0.0	29.9	783
1985	634	37,889	0.0	0.0	34.5	0.0	29.7	0.4	31.8	0.0	3.6	0.0	0.0	0.0	36.2	713
1986	141	19,414	0.0	2.2	12.5	0.0	56.5	0.0	24.2	0.0	4.6	0.0	0.0	0.0	32.0	715
1987	549	36,179	0.0	0.0	47.2	0.0	15.7	0.0	35.7	0.0	1.5	0.0	0.0	0.0	21.9	632
1988	645	55,716	0.0	0.0	30.9	0.0	44.0	0.0	19.1	0.0	6.0	0.0	0.0	0.0	35.5	699
1989	353	43,217	0.0	0.0	33.1	0.0	24.8	3.5	29.7	1.4	5.2	2.2	0.0	0.0	28.2	719
1990	408	53,504	0.0	0.0	41.4	0.0	37.7	0.0	17.4	0.0	3.5	0.0	0.0	0.0	18.0	691
1991	420	37,778	0.2	0.0	33.0	0.0	30.5	1.9	28.4	1.5	2.8	1.3	0.0	0.5	36.0	712
1992	717	46,872	0.0	1.2	45.7	0.0	27.7	0.2	24.0	0.0	1.0	0.1	0.0	0.0	22.6	658
1993	102	8,735	0.0	0.0	61.6	0.0	21.5	0.0	9.6	4.8	0.5	1.0	0.0	1.0	6.3	621
1994	208	16,211	0.0	0.5	17.3	0.0	50.3	1.9	26.0	1.0	2.0	1.0	0.0	0.0	23.7	708
1995	578	30,846	0.0	0.1	34.2	0.0	15.9	0.0	49.0	0.0	0.8	0.0	0.0	0.0	31.2	715
1996	592	7,419	0.0	0.3	27.7	0.0	42.6	0.0	19.9	0.1	9.4	0.0	0.1	0.0	20.6	686
1997	162	10,441	0.0	0.0	52.5	0.0	16.7	0.0	30.2	0.0	0.6	0.0	0.0	0.0	18.5	673
1998	437	17,359	0.0	1.1	23.8	0.0	59.0	0.0	13.9	0.0	2.2	0.0	0.0	0.0	22.0	692
1999	190	4,705	0.0	0.5	29.5	0.0	23.2	0.0	45.8	0.0	1.1	0.0	0.0	0.0	28.4	704

-continued-

Table 70.–Page 2 of 2.

Year	Sample Size	Total Harvest	Percent by Age Class												Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
2000 [a]		444														
2001 [b]	20	90														
2002 [b]		72														
2003 [a]		158														
2004	353	2,305	0.0	1.2	58.2	0.0	25.4	0.0	14.6	0.0	0.6	0.0	0.0	0.0	11.6	645
2005	488	4,784	0.0	0.0	36.8	0.0	48.0	0.2	14.8	0.0	0.2	0.0	0.0	0.0	16.0	667
2006 [c]	184	2,777	0.0	1.1	60.9	0.0	27.2	0.0	10.3	0.0	0.5	0.0	0.0	0.0	7.1	617
2007 [b]		179														
2008	455	8,865	0.0	0.0	40.3	0.0	46.6	0.3	10.0	1.3	1.5	0.0	0.0	0.0	10.4	627
2009	388	6,664	0.0	0.0	41.9	0.0	30.0	0.5	26.3	0.0	1.0	0.2	0.0	0.0	20.1	673
2010	290	2,731	0.0	0.0	35.6	0.0	38.7	0.0	24.9	0.0	0.3	0.4	0.0	0.0	29.0	660
2011 [bd]	13	49														
2012 [ad]		14														
2013 [ad]		1														

Note: Harvest totals are Districts W1 and W2 combined. From 1964 to 1971 mesh size was unrestricted, from 1972 to 1984, both restricted (≤6.0 inch) and unrestricted mesh sizes were used, since 1985 mesh size has been restricted (≤6.0 inch). Harvest totals exclude fish kept for personal use.

[a] ASL data were not collected.

[b] Sampling was not appropriate for estimating ASL composition for the season.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[d] Sale of Chinook salmon was prohibited.

Table 71.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W4 commercial gillnet fishery, 1969–2013.

Year	Sample Size	Total Harvest	Percent by Age Class														Percent Females	Mean Length (mm)
			(0.1)	(0.2)	(1.1)	(0.3)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1969	204	16,802	0.0	0.0	1.7	0.0	31.1	0.0	19.3	0.0	39.8	0.0	6.7	1.3	0.0	0.0	39.1	709
1970	259	18,269	0.0	0.0	0.0	0.0	19.4	0.0	34.6	0.2	34.5	2.4	7.7	1.1	0.0	0.0	30.1	727
1971 [a]		4,185																
1972 [a]		15,880																
1973	213	14,993	0.0	0.0	0.0	0.0	6.1	0.0	11.0	0.0	70.8	0.0	12.1	0.0	0.0	0.0	53.8	848
1974	150	8,704	0.0	0.0	1.4	0.0	30.9	0.0	13.6	0.0	25.0	0.0	29.1	0.0	0.0	0.0	32.8	771
1975	198	3,928	0.0	0.0	1.1	0.0	33.3	0.0	44.6	0.0	16.3	0.0	4.7	0.0	0.0	0.0	26.1	679
1976	349	14,110	0.0	0.0	0.0	0.0	49.5	0.0	32.2	0.0	17.5	0.0	0.7	0.0	0.0	0.0	23.8	656
1977	480	19,090	0.0	0.0	0.0	0.0	2.5	0.0	39.0	0.0	56.5	0.0	2.0	0.0	0.0	0.0	49.0	818
1978	234	12,335	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	91.9	0.0	4.3	0.0	0.8	0.0	52.4	887
1979 [b]	377	11,144																
1980	495	10,387	0.0	0.0	4.6	0.0	29.6	0.0	40.8	0.2	20.2	0.8	3.6	0.2	0.0	0.0	43.1	705
1981	612	24,524	0.0	0.0	0.1	0.0	55.1	0.0	23.6	0.0	19.2	0.0	1.9	0.0	0.0	0.0	57.9	667
1982 [b]	715	22,106																
1983	762	46,385	0.0	0.0	0.3	0.0	26.2	0.0	7.2	0.0	64.0	0.0	2.3	0.0	0.0	0.0	39.1	779
1984	583	33,663	0.0	0.0	0.0	0.0	12.7	0.0	55.0	0.0	25.1	0.0	7.2	0.0	0.0	0.0	15.2	719
1985	568	30,401	0.0	0.0	0.0	0.0	19.4	0.0	23.1	0.0	55.3	0.0	2.2	0.0	0.0	0.0	32.3	778
1986	502	22,835	0.0	0.0	1.6	0.0	5.8	0.0	45.5	0.0	35.1	0.0	12.1	0.0	0.0	0.0	28.8	771
1987	524	26,022	0.0	0.0	0.5	0.0	27.0	0.0	17.5	0.0	52.5	0.0	2.5	0.0	0.0	0.0	16.3	738
1988	591	13,883	0.0	0.0	0.0	0.0	24.0	0.0	33.4	0.0	30.5	0.0	12.1	0.0	0.0	0.0	38.6	749
1989	422	20,820	0.0	0.0	2.2	0.0	20.4	0.0	18.8	0.0	53.3	0.0	5.3	0.0	0.0	0.0	46.0	780
1990	349	27,644	0.0	0.0	0.0	0.0	21.8	0.0	34.9	0.0	31.2	0.1	10.7	0.3	0.5	0.1	38.8	743
1991	503	9,480	0.0	0.0	0.1	0.0	18.5	0.0	25.8	0.0	48.4	0.4	6.6	0.0	0.0	0.1	39.5	768
1992	501	17,197	0.0	0.0	4.9	0.0	31.3	0.0	35.3	0.0	24.7	0.0	3.7	0.0	0.0	0.0	66.1	N/A
1993	337	15,784	0.0	0.0	0.0	0.0	36.4	0.0	27.9	0.3	30.9	1.0	3.3	0.2	0.0	0.0	38.5	706
1994	326	8,564	0.0	0.0	1.1	0.0	17.2	0.0	40.3	0.0	36.6	0.0	4.4	0.3	0.0	0.0	45.1	739
1995	603	38,584	0.0	0.0	0.0	0.0	23.6	0.0	15.8	0.0	60.0	0.0	0.6	0.0	0.0	0.0	44.4	761
1996 [c]	399	14,165																
1997	573	35,510	0.0	0.0	1.1	0.0	35.2	0.1	12.0	0.0	51.0	0.0	0.6	0.0	0.0	0.0	35.0	710
1998	724	23,158	0.0	0.0	3.1	0.0	24.1	0.0	51.3	0.0	19.4	0.0	2.1	0.0	0.0	0.0	20.7	692
1999	662	18,426	0.0	0.0	0.4	0.0	29.8	0.0	22.2	0.1	45.6	0.0	1.6	0.2	0.0	0.0	30.2	718

-continued-

Table 71.–Page 2 of 2.

Year	Sample Size	Total Harvest	Percent by Age Class (0.1)	(0.2)	(1.1)	(0.3)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	Percent Females	Mean Length (mm)
2000	480	21,229	0.0	0.0	0.7	0.0	13.3	0.0	43.0	0.0	40.5	0.0	2.4	0.0	0.0	0.0	30.4	734
2001	570	12,775	0.0	0.0	0.3	0.0	9.6	0.0	13.5	0.0	75.3	0.0	1.2	0.0	0.0	0.0	39.5	791
2002	436	11,480	0.0	0.0	1.0	0.0	30.8	0.0	27.6	0.0	36.3	0.0	4.3	0.0	0.0	0.0	23.3	687
2003	547	14,444	0.0	0.0	2.9	0.0	27.6	0.0	34.3	0.0	32.6	0.0	2.5	0.0	0.0	0.0	23.7	681
2004	208	25,465	0.0	0.0	0.5	0.0	46.6	0.0	29.4	0.0	21.7	0.0	1.9	0.0	0.0	0.0	14.0	677
2005	866	24,195	0.0	0.0	0.5	0.0	22.1	0.0	49.4	0.0a	27.3	0.0	0.7	0.0	0.0	0.0	25.8	717
2006	658	19,184	0.0	0.0	0.2	0.0	32.9	0.0	30.9	0.3	33.4	0.0	2.3	0.0	0.0	0.0	26.9	696
2007	615	19,573	0.0	0.0	0.4	0.0	36.0	0.0	23.2	0.0	38.0	0.2	1.6	0.6	0.0	0.0	26.9	687
2008	529	13,812	0.0	0.0	0.0	0.0	30.3	0.0	42.4	0.0	25.7	0.0	1.1	0.5	0.0	0.0	24.0	678
2009	567	13,920	0.0	0.0	1.5	0.0	44.5	0.0	26.9	0.5	26.0	0.1	0.4	0.1	0.0	0.0	17.6	657
2010	479	14,230	0.0	0.0	2.0	0.0	22.7	0.0	50.3	0.0	24.5	0.0	0.5	0.0	0.0	0.0	28.4	692
2011	749	15,387	0.0	0.0	1.4	0.0	42.0	0.0	32.7	0.5	22.1	0.4	0.8	0.2	0.0	0.0	20.1	658
2012	789	6,675	0.0	0.4	0.5	0.1	28.8	0.1	38.5	0.5	30.5	0.0	0.6	0.0	0.0	0.0	33.6	700
2013	257	2,054	0.8	0.9	0.3	0.0	19.3	0.0	37.0	0.3	40.5	0.0	1.0	0.0	0.0	0.0	39.9	732

Note: From 1969 to 1971 mesh size was unrestricted, from 1972 to 1984 both restricted (≤6.0 inch) and unrestricted mesh sizes were used, and since 1985 mesh size has been restricted mesh (≤6.0 inch). N/A designates years when length data were not available or not summarized.

[a] ASL data were not collected.

[b] Samples were not summaries in Molyneaux et al. 2010.

[c] Sampling was not appropriate for estimating ASL composition for the season.

Table 72.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvest in the W5 commercial gillnet fishery, 1990–2013.

Year	Sample Size	Total Harvest	Percent by Age Class													Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(1.2)	(2.1)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1990 [a]	148	3,303															
1991	258	912	0.0	0.0	27.9	0.0	0.0	41.5	0.2	24.1	0.0	3.6	2.3	0.0	0.4	38.6	N/A
1992	140	3,528	0.0	0.7	29.9	0.0	0.0	35.3	1.1	30.5	0.0	1.5	1.1	0.0	0.0	35.2	N/A
1993 [a]	152	2,117															
1994 [a]	150	2,570															
1995 [a]	196	2,922															
1996 [b]		1,375															
1997	471	2,039	0.0	0.9	46.6	0.0	0.0	12.3	0.0	38.8	0.0	1.4	0.0	0.0	0.0	32.1	714
1998	404	3,675	0.0	1.5	16.2	0.0	0.0	57.6	0.0	22.3	0.0	2.4	0.0	0.0	0.0	25.8	722
1999 [a]	312	1,888															
2000	376	4,442	0.0	0.0	20.4	0.0	0.0	58.4	0.0	19.5	0.0	1.7	0.0	0.0	0.0	51.7	705
2001	262	1,519	0.0	0.2	12.5	0.0	0.0	22.4	0.0	63.1	0.0	1.8	0.0	0.0	0.0	60.1	775
2002	164	979	0.0	0.8	38.2	0.0	0.0	31.4	0.0	27.9	0.0	1.7	0.0	0.0	0.0	22.0	644
2003 [a]	142	1,412															742
2004	129	2,565	0.0	0.0	53.2	0.0	0.0	26.1	0.0	16.3	0.0	4.5	0.0	0.0	0.0	N/A	655
2005 [a]	208	2,035															683
2006	182	2,892	0.0	0.0	33.0	0.0	0.0	45.1	0.0	20.3	0.0	1.6	0.0	0.0	0.0	17.6	674
2007	369	3,126	0.0	0.0	39.8	0.0	0.0	21.9	0.0	35.0	0.6	0.4	2.3	0.0	0.0	27.5	696
2008 [b]		1,281															
2009	515	1,509	0.0	0.3	52.9	0.0	0.0	19.2	0.2	26.1	0.8	0.5	0.0	0.0	0.0	21.3	643
2010	621	1,752	0.0	2.2	32.3	0.0	0.0	50.8	0.2	13.7	0.0	0.9	0.0	0.0	0.0	23.4	666
2011	540	2,091	0.0	0.2	62.6	0.0	0.0	21.4	0.3	15.1	0.0	0.4	0.0	0.0	0.0	12.1	611
2012	664	1,531	0.0	0.0	19.2	0.0	0.0	65.6	0.2	15.1	0.0	0.0	0.0	0.0	0.0	28.7	703
2013	106	495	0.0	0.0	25.5	0.0	0.9	37.7	0.0	35.8	0.0	0.0	0.0	0.0	0.0	37.7	718

Note: From 1990 to 2012 restricted mesh (≤6.0 inch) gillnets were used. ASL samples are available discontinuously back to 1973 but summaries have not been produced. N/A designates years when data were not available or not summarized.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] ASL data were not collected.

Table 73.–Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the Bethel test fishery, 2001–2013.

Year	Sample Size	Total Harvest	Percent by Age Class								Percent Females	Mean Length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
2001	75	86	0.0	30.8	26.6	0.0	33.2	0.0	6.6	2.7	24.0	723
2002	197	288	0.0	33.4	33.1	1.6	31.4	0.0	0.5	0.0	14.8	689
2003	311	409	0.3	35.8	39.9	0.0	20.0	0.0	3.9	0.0	13.9	674
2004	322	691	0.0	38.3	41.7	0.6	17.7	0.0	1.6	0.0	12.1	684
2005	335	557	0.0	28.7	43.0	0.0	27.0	0.3	1.1	0.0	24.0	708
2006	244	352	0.0	28.4	30.2	0.0	37.1	0.0	4.4	0.0	29.6	744
2007	98	305	0.0	34.1	37.0	0.0	24.5	0.0	4.3	0.0	28.1	720
2008 [a]	30	420										
2009 [b]		470										
2010 [b]		292										
2011	216	337	0.0	38.8	30.0	0.0	29.2	0.0	1.9	0.0	29.1	693
2012	228	321	0.0	19.3	56.6	0.0	22.8	0.4	0.4	0.4	25.0	717
2013	146	201	0.0	28.0	35.8	0.0	34.3	0.0	1.9	0.0	33.2	723

Note: Bethel test fishery uses a 5.375 inch and 8.0 inch drift gillnet to index run timing and relative abundance of Chinook salmon.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] ASL data were not collected.

Table 74.–Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the lower Kuskokwim River subsistence fishery, 2001–2013.

Year	Number of Samplers	Sample Size	Total Harvest	Percent by Age Class (1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	Percent Females	Mean Length (mm)
2001	18	1,059	78,009	0.0	0.0	4.7	0.0	30.2	0.0	60.6	0.0	4.3	0.1	0.0	33.6	777
2002	24	2,015	80,982	0.0	0.0	7.8	0.0	33.0	0.0 [a]	53.9	0.0	5.2	0.0	0.0 [a]	40.5	769
2003	32	2,035	67,737	0.2	0.0	6.7	0.0	44.2	0.0	42.1	0.0	6.7	0.0	0.0	37.3	781
2004	21	2,032	96,788	0.1	0.0	15.2	0.0	35.9	0.3	45.9	0.0 [a]	2.6	0.0	0.0	33.2	759
2005	30	2,409	85,863	0.0 [a]	0.0	5.4	0.0	49.8	0.0	42.7	0.2	1.8	0.1	0.0	36.7	776
2006	23	1,684	90,812	0.2	0.0	6.3	0.0	35.7	0.1	53.3	0.2	4.1	0.1	0.0	42.3	787
2007	32	1,987	94,898	0.0	0.0	6.5	0.0	37.1	0.0	52.8	0.3	2.6	0.7	0.0	42.2	734
2008	46	2,802	88,912	0.2	0.0	8.2	0.0	53.8	0.0 [a]	34.3	0.6	2.6	0.2	0.0	33.8	752
2009	54	3,606	79,896	0.1	0.0	10.0	0.0	34.7	0.1	53.6	0.1	1.3	0.1	0.0 [a]	38.0	770
2010	35	1,695	67,286	0.1	0.1	7.8	0.1	49.2	0.1	39.7	0.0	3.0	0.0	0.0	42.4	773
2011	20	968	62,366	0.3	0.0	13.3	0.0	47.7	0.0	36.5	0.2	1.9	0.0	0.1	34.4	746
2012	8	265	22,544	0.0	0.0	14.0	0.0	52.8	0.0	30.2	0.4	2.6	0.0	0.0	32.1	758
2013	16	595	47,113	0.2	0.0	5.7	0.0	30.4	0.0	61.8	0.5	1.2	0.2	0.0	41.3	776

Note: Samples were collected by subsistence fishermen who sampled their own harvests or the harvests of others.

[a] Age class was present but represented less than 0.1%.

Table 75.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Middle Fork Goodnews River weir, 1991–2013.

Year	Sample Size	Total Escapement	Percent by Age Class									Percent Females	Mean Length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(2.5)		
1991	279	1,952	0.0	17.3	32.0	0.0	39.1	0.0	11.0	0.3	0.3	44.7	N/A
1992 [a]	70	1,905											
1993 [a]	31	2,349											
1994 [a]	208	3,856											
1995	308	4,836	0.0	17.4	17.5	0.0	64.3	0.0	0.8	0.0	0.0	43.8	798
1996 [a]	42	2,931											
1997	121	2,937	0.6	60.3	9.1	0.0	30.0	0.0	0.0	0.0	0.0	25.0	691
1998 [a]	8	4,584											
1999 [a]	28	3,221											
2000	214	2,500	1.1	11.9	63.9	0.0	22.2	0.0	0.9	0.0	0.0	32.0	738
2001 [a]	39	5,351											
2002	199	3,085	0.0	31.0	23.7	0.0	41.1	0.0	4.2	0.0	0.0	32.2	713
2003	241	2,389	3.2	13.6	44.1	0.0	34.4	0.0	4.7	0.0	0.0	41.6	742
2004 [a]	174	4,388											
2005 [a]	155	4,633											
2006 [a]	57	4,559											
2007	209	3,852	1.2	33.7	27.2	0.0	34.8	0.3	1.2	1.6	0.0	37.2	713
2008	123	2,161	7.8	17.5	42.0	0.0	26.1	0.0	6.5	0.0	0.0	46.6	718
2009 [a]	57	1,630											
2010 [a]	76	2,244											
2011 [a]	44	1,861											
2012 [a]	45	513											
2013	175	1,189	0.5	14.8	22.4	0.0	60.8	0.0	1.0	0.5	0.0	56.7	795

Note: N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate for estimating ASL composition for the season.

Table 76.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kanektok River weir, 2002–2013.

Year	Sample Size	Total Escapement	Percent by Age Class								Percent Females	Mean Length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
2002	188	5,343	2.3	22.9	25.0	0.0	43.1	0.0	6.6	0.0	37.5	712
2003	174	8,231	2.3	23.6	35.3	0.0	36.7	0.0	2.0	0.0	32.7	704
2004	428	19,528	0.2	58.3	25.2	0.0	15.6	0.0	0.7	0.0	13.6	658
2005 [a]	224	14,331										
2006 [b]												
2007	431	14,120	0.9	32.9	19.1	0.0	44.2	0.0	2.7	0.2	34.9	706
2008 [a]	34	6,578										
2009	468	6,841	0.4	26.2	23.2	0.2	49.5	0.0	0.2	0.2	37.3	740
2010	224	5,800	0.9	35.2	44.0	0.4	19.1	0.0	0.5	0.0	23.7	659
2011	159	5,032	0.0	59.2	27.9	0.0	12.9	0.0	0.0	0.0	22.0	617
2012 [a]	48	1,568										
2013	153	3,569	0.0	35.2	25.7	0.0	37.8	0.5	0.8	0.0	36.8	689

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Weir did not operate.

Table 77.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kwethluk River weir, 1992 and 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class								Percent Females	Mean Length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
1992	759	9,675	6.6	37.6	23.8	0.4	30.1	0.1	1.2	0.1	25.0	649
2000	301	3,547	0.0	29.9	36.4	0.0	27.5	0.0	6.2	0.0	21.7	688
2001 [ab]	2	129										
2002	807	8,502	0.0	44.4	33.1	0.0	20.6	0.0	1.9	0.0	20.8	655
2003	1,133	14,474	0.3	30.7	43.3	0.0	23.2	0.0	2.5	0.0	18.3	688
2004	1,151	28,605	0.7	56.1	22.7	0.1	19.9	0.0	0.6	0.0	16.7	672
2005 [c]												
2006	923	17,619	0.3	32.4	22.5	0.0	40.1	0.0	4.6	0.0	39.9	736
2007	836	12,927	0.2	44.8	30.8	0.0	22.6	0.0	1.7	0.0	25.4	665
2008	567	5,276	0.0	19.5	42.3	0.1	34.0	0.7	3.4	0.0	34.5	759
2009	488	5,744	0.0	22.6	27.8	1.0	48.1	0.0	0.5	0.0	42.3	779
2010	334	1,668	0.0	16.8	43.3	0.0	35.8	0.0	4.0	0.0	50.3	759
2011	582	4,079	0.0	28.2	25.8	0.2	43.6	0.3	1.8	0.0	34.1	736
2012 [ad]	86	945	0.0	12.3	68.9	0.0	18.9	0.0	0.0	0.0	40.6	740
2013 [ab]	38	652										

Note: The Kwethluk River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Weir did not operate for much of the season. Escapement shown is partial.

[b] Sampling was not appropriate for estimating ASL composition for the season.

[c] Weir did not operate.

[d] Samples were applied to observed escapement.

Table 78.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Tuluksak River weir, 1991–1994 and 2001–2013.

Year	Sample Size	Total Escapement	Percent by Age Class												Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1991	346	697	0.0	0.0	16.0	0.0	20.9	10.2	33.2	6.9	8.2	3.0	0.3	1.3	29.1	715
1992	538	1,083	0.0	8.8	38.8	0.0	32.6	2.3	15.4	0.5	1.5	0.0	0.0	0.0	14.7	639
1993	619	2,218	0.0	1.2	52.0	0.0	28.2	0.6	15.9	0.8	0.9	0.3	0.0	0.0	13.8	637
1994	475	2,918	0.2	1.2	18.8	0.4	52.9	1.3	17.9	3.7	0.5	3.0	0.0	0.0	23.1	710
2001 [a]	22	996														
2002	188	1,346	0.0	2.4	38.0	0.0	30.9	0.0	27.5	0.0	2.4	0.0	0.0	0.0	37.8	684
2003	225	1,064	0.0	0.2	33.4	0.0	39.8	0.0	22.4	0.0	4.2	0.0	0.0	0.0	30.5	709
2004	255	1,475	0.0	0.8	24.6	0.0	62.4	0.0	31.2	0.0	1.0	0.0	0.0	0.0	35.6	730
2005	438	2,653	0.0	0.0	31.7	0.0	33.3	0.0	34.4	0.0	0.7	0.0	0.0	0.0	40.8	696
2006	149	1,043	0.0	0.0	36.5	0.0	32.8	0.0	28.3	0.0	2.4	0.0	0.0	0.0	27.7	691
2007	197	374	0.0	1.0	13.1	0.0	27.0	0.0	55.7	0.0	3.1	0.0	0.0	0.0	48.5	757
2008	255	701	0.0	0.0	15.8	0.0	49.3	0.2	30.2	2.0	2.5	0.0	0.0	0.0	51.4	761
2009	220	362	0.0	0.0	20.9	0.0	34.1	0.8	43.1	0.0	1.2	0.0	0.0	0.0	45.9	739
2010	85	201	0.0	0.0	52.9	0.0	35.3	0.0	10.6	0.0	1.2	0.0	0.0	0.0	29.4	636
2011 [a]	19	284														
2012 [a]	3	560														
2013 [a]	7	193														

Note: The Tuluksak River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Sampling was not appropriate for estimating ASL composition for the season.

Table 79.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim River Chinook salmon past the George River weir, 1996–2013.

Year	Sample Size	Total Escapement	Percent by Age Class									Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
1996	191	7,716	0.0	0.0	7.1	23.2	0.4	39.8	0.0	29.4	0.0	44.3	816
1997	269	7,823	0.0	0.0	34.6	11.7	0.0	53.7	0.0	0.0	0.0	37.4	736
1998 [ab]	75	2,505											
1999 [ab]	54	2,439											
2000 [a]	72	2,960											
2001	62	3,309	0.0	0.0	12.5	30.9	0.0	48.8	0.0	8.1	0.0	33.0	757
2002	315	2,444	0.0	0.0	12.6	18.3	0.0	60.9	0.0	8.2	0.0	40.6	759
2003 [ab]	23	975											
2004	269	5,206	0.0	0.5	25.9	21.2	0.0	49.6	0.0	2.7	0.0	37.7	763
2005	471	3,845	0.0	0.0	10.6	43.9	0.0	40.7	1.2	3.3	0.3	35.7	756
2006	223	4,355	0.0	0.2	24.9	28.2	0.0	35.8	0.0	10.8	0.0	35.1	736
2007 [a]	249	4,883											
2008	288	2,698	0.0	0.0	19.8	48.7	0.0	27.3	1.0	3.2	0.0	27.9	699
2009	152	3,663	0.0	0.0	21.1	25.0	0.0	52.0	0.0	1.0	0.9	41.9	762
2010	163	1,500	0.0	1.1	35.8	27.9	0.0	29.9	0.0	5.3	0.0	30.6	647
2011	167	1,571	0.0	1.2	35.2	33.5	0.0	27.7	0.4	1.7	0.4	37.5	686
2012	138	2,302	0.6	0.0	30.2	41.2	0.0	25.6	1.4	1.1	0.0	30.5	695
2013 [a]	85	1,219											

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Weir did not operate for a portion of the season. No estimates of missed passage. Escapement shown is partial.

Table 80.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Tatlawiksuk River weir, 1998–2013.

Year	Sample Size	Total Escapement	Percent by Age Class								Percent Females	Mean Length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
1998 [ab]	15	970										
1999 [b]	7	1,490										
2000 [b]	7	810										
2001 [b]	74	2,010										
2002	279	2,237	0.0	23.2	19.7	0.4	52.9	0.0	3.6	0.0	36.8	716
2003 [ab]	39	601										
2004	301	2,833	0.0	26.5	40.6	0.0	32.9	0.0	0.0	0.0	32.6	716
2005	384	2,918	0.0	13.4	49.5	0.0	35.6	0.0	1.4	0.0	42.6	729
2006	178	1,700	0.0	21.0	44.1	0.0	30.4	0.0	4.6	0.0	41.4	682
2007	275	2,061	0.4	34.7	43.9	0.0	19.7	0.0	1.0	0.4	27.2	653
2008	93	1,071	0.0	10.3	57.4	0.0	32.3	0.0	0.0	0.0	39.0	709
2009	93	1,071	0.0	31.7	40.1	0.0	27.5	0.0	0.0	0.8	40.0	730
2010	80	569	1.0	29.4	43.2	0.0	23.3	0.0	2.0	1.1	39.4	706
2011	123	1,014	0.0	45.5	30.2	0.0	21.7	0.0	1.7	0.8	25.5	664
2012	91	1,116	0.0	21.9	61.4	0.0	16.7	0.0	0.0	0.0	42.8	713
2013 [b]	66	495										

[a] Weir did not operate for a portion of the season. No estimates of missed passage. Escapement shown is partial.

[b] Sampling was not appropriate for estimating ASL composition for the season.

Table 81.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kogrukluk River weir, 1976–2013.

			Percent by Age Class										
Year	Sample Size	Total Escapement	(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	Percent Females	Mean Length (mm)
1976	347	5,600	0.0	7.6	40.7	0.4	50.8	0.0	0.4	0.0	0.0	44.7	815
1977 [ab]		1,385											
1978	516	13,667	0.2	17.0	10.5	0.0	55.9	1.4	3.0	12.1	0.0	46.2	849
1979	383	11,338	0.0	66.2	14.4	0.0	16.3	0.0	3.1	0.0	0.0	13.3	691
1980 [ac]	118	843											
1981	797	16,809	0.3	7.4	30.3	0.0	58.2	0.0	3.9	0.0	0.0	44.0	830
1982	392	10,993	0.0	4.1	24.5	0.0	66.3	0.0	5.1	0.0	0.0	51.7	779
1983 [a]	448	1,082	0.2	20.0	19.6	0.0	55.9	0.0	4.2	0.0	0.0	30.5	763
1984	1,376	4,928	0.1	22.5	47.5	0.0	26.4	0.0	3.5	0.0	0.1	21.0	701
1985	1,042	4,625	0.0	16.2	35.7	0.0	44.9	0.0	3.2	0.0	0.1	31.5	745
1986 [a]	679	2,922	0.4	8.6	50.9	0.0	32.8	0.0	7.2	0.0	0.0	30.4	726
1987 [ac]	141	770											
1988	867	8,520	0.0	8.0	52.7	0.0	31.4	0.0	8.0	0.0	0.0	35.3	728
1989 [a]	217	4,911											
1990 [d]	367	10,214										22.2	714
1991	315	7,850	0.0	6.4	29.8	0.3	62.4	0.0	1.1	0.0	0.0	49.3	830
1992 [c]	349	6,756											
1993 [c]	313	12,333											
1994 [ac]	232	8,305											
1995	533	20,650	0.0	19.1	25.5	0.0	55.1	0.1	0.2	0.1	0.0	42.9	796
1996	480	14,196	0.0	12.6	54.9	0.0	25.3	0.4	6.8	0.0	0.0	24.0	761
1997	472	13,285	0.0	33.7	20.4	0.0	45.4	0.0	0.4	0.0	0.0	31.4	758
1998 [ac]	86	3,009											
1999	305	5,570	0.3	5.4	25.2	0.3	67.3	0.0	1.5	0.0	0.0	53.2	782
2000	98	3,310	0.0	9.9	49.2	0.0	39.1	0.0	1.8	0.0	0.0	41.2	743
2001	397	9,296	0.0	15.3	39.3	0.0	43.8	0.0	1.5	0.0	0.0	28.5	739
2002	466	10,105	0.0	17.4	50.0	0.0	31.2	0.0	1.4	0.0	0.0	25.5	719
2003	373	11,771	0.0	18.7	42.6	0.0	36.0	0.0	2.8	0.0	0.0	31.3	732
2004	731	19,651	0.0	44.7	36.2	0.0	18.5	0.0	0.6	0.0	0.0	16.4	675
2005	734	21,999	0.3	24.3	46.5	0.0	28.1	0.0	0.9	0.0	0.0	34.7	714
2006	711	19,414	0.5	34.9	30.9	0.0	29.4	0.0	4.3	0.0	0.0	33.4	705
2007 [a]	289	6,923	0.0	32.3	33.0	0.0	31.7	0.0	2.9	0.0	0.0	28.4	699
2008	296	9,730	0.5	35.9	43.4	0.0	19.1	0.2	1.0	0.0	0.0	23.2	676
2009	245	9,701	0.0	22.2	52.4	0.7	22.9	0.4	1.4	0.0	0.0	28.2	730
2010	298	5,693	0.0	44.0	28.8	0.0	25.6	0.0	1.5	0.0	0.0	26.2	672
2011	268	6,890	0.0	47.2	32.6	0.3	19.5	0.3	0.0	0.0	0.0	20.1	673
2012 [ac]	87	1,156											
2013 [c]	61	1,772											

[a] Weir inoperable for a majority of the season. Escapement shown is partial.

[b] ASL Samples were not collected.

[c] Sampling was not appropriate for estimating ASL composition for the season.

[d] All 1990 scales need re-aged due to potential errors.

Table 82.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Takotna River weir, 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class							Percent Females	Mean Length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)		
2000	78	345	1.4	30.7	31.6	0.0	35.7	0.0	0.6	24.6	653
2001 [a]	74	721									
2002	98	316	0.0	22.3	30.4	0.0	46.3	0.0	0.9	30.0	725
2003 [a]	61	378									
2004 [a]	69	461									
2005 [a]	170	499									
2006	269	541	1.7	42.4	30.2	0.0	23.1	0.0	2.6	23.3	670
2007	269	418	0.0	50.6	33.5	0.0	14.8	0.3	0.8	12.9	620
2008	154	413	0.0	21.8	52.2	0.0	25.2	0.4	0.4	24.6	685
2009	107	311	0.0	28.4	29.7	0.0	41.9	0.0	0.0	41.6	721
2010 [a]	76	178									
2011	56	148	0.0	41.4	40.9	0.0	17.7	0.0	0.0	34.1	668
2012	42	228	0.0	46.4	46.8	0.0	6.9	0.0	0.0	29.4	672
2013 [a]	10	94									

[a] Sampling was not appropriate for estimating ASL composition for the season.

Table 83.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W1 commercial gillnet fishery, 1972–2013.

Year	Sample Size	Total Harvest	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	Percent Females	Mean Length (mm)
1972	542	78,619	3.1	39.4	57.5	0.0	54.9	585
1973	534	148,746	0.4	60.8	35.8	2.9	46.5	583
1974	163	171,887	1.3	46.8	47.1	4.9	47.7	553
1975	527	184,171	1.0	85.6	13.0	0.4	53.5	575
1976 [a]	514	177,864						
1977	679	248,721	9.6	83.0	7.3	0.1	56.6	581
1978	877	248,656	6.0	64.8	29.0	0.2	54.5	579
1979 [a]	962	261,874						
1980	507	483,751	0.5	98.1	1.4	0.0	56.8	557
1981	855	418,677	1.8	37.0	61.1	0.1	51.3	580
1982	888	278,306	1.0	67.8	29.7	1.4	53.5	583
1983	1,705	276,698	0.8	47.0	50.8	1.3	52.8	587
1984	1,834	423,718	0.8	89.1	9.7	0.7	60.0	576
1985	1,063	199,478	0.8	36.8	62.0	0.4	54.1	585
1986	1,064	309,213	0.4	76.5	22.6	0.5	53.1	581
1987	1,312	574,336	1.5	52.9	44.8	0.8	57.0	581
1988	2,404	1,381,674	0.8	79.3	19.1	0.8	49.1	577
1989	655	749,182	0.2	36.9	61.8	1.1	52.1	584
1990	558	461,624	0.6	70.6	27.5	1.3	51.8	576
1991	1,630	431,802	2.2	64.9	32.8	0.1	55.6	566
1992	1,677	344,603	0.0	44.5	53.5	2.0	48.9	555
1993	318	43,337	1.4	32.2	60.2	6.2	45.9	554
1994	1,389	271,115	0.7	72.5	24.7	2.0	56.7	546
1995	1,811	605,918	3.6	58.0	37.0	1.4	54.5	557
1996	2,169	207,877	0.3	73.0	24.5	2.2	53.7	565
1997	355	17,026	3.3	52.1	42.2	2.4	47.6	571
1998	1,433	207,809	0.8	87.2	11.8	0.1	57.1	557
1999	268	23,006	0.0	58.0	41.9	0.0	50.7	576
2000	253	11,570	2.4	73.6	23.0	1.0	52.6	566
2001 [b]	118	1,272						
2002 [b]	93	1,900						
2003 [b]	118	2,764						
2004	737	20,150	30.7	42.2	27.1	0.0	47.3	551
2005	779	69,139	0.9	93.1	5.9	0.1	53.4	558
2006 [c]	392	44,070	0.4	49.9	49.7	0.0	45.9	571
2007 [b]	201	10,763						
2008	865	30,516	0.3	20.7	74.3	4.7	41.9	563
2009	1,199	76,790	2.1	66.6	29.1	2.2	42.6	564
2010	1,265	93,148	2.8	72.6	23.5	1.1	44.7	552
2011	903	118,316	0.3	63.9	35.0	0.8	43.2	553
2012	668	65,171	1.7	73.2	23.3	1.7	56.8	547
2013	196	52,235	0.0	81.6	17.3	1.0	48.0	555

Note: Harvest data are from Districts W1 and W2 combined. The commercial chum salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] ASL samples were not summarized in Molyneaux et al. 2010.

[b] Sampling was not appropriate for estimating ASL composition for the season.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

Table 84.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W4 commercial gillnet fishery, 1984–2013.

Year	Sample Size	Total Harvest	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent Females	Mean Length (mm)
1984	464	50,422	0.3	75.5	23.6	0.6	0.0	54.1	589
1985	457	20,418	0.0	46.2	53.1	0.7	0.0	53.5	597
1986	398	29,700	0.0	58.6	41.4	0.0	0.0	53.8	584
1987 [a]	241	8,557							
1988	593	29,220	1.3	68.0	29.3	1.4	0.0	49.6	583
1989	703	39,395	0.0	49.0	49.7	1.3	0.0	53.4	590
1990	618	47,717	0.8	77.3	21.3	0.6	0.0	55.0	584
1991	656	54,493	1.0	72.5	26.5	0.0	0.0	52.0	565
1992	546	73,383	0.2	35.4	62.9	1.5	0.0	52.3	590
1993	398	40,943	0.9	42.2	47.1	9.8	0.0	51.1	550
1994 [a]	547	61,301							
1995	598	81,462	7.6	48.5	43.1	0.8	0.0	64.1	574
1996 [a]	615	83,005							
1997	1,221	38,445	1.5	37.5	59.9	1.1	0.0	54.4	582
1998	857	45,095	0.7	89.0	9.6	0.7	0.0	58.5	574
1999	814	38,091	0.2	70.0	29.6	0.2	0.0	57.7	583
2000	1,043	30,553	0.5	54.0	44.9	0.6	0.0	54.3	595
2001	576	17,209	0.4	49.9	49.5	0.2	0.0	59.0	575
2002	449	29,252	4.0	56.9	36.8	2.2	0.0	63.8	574
2003	243	27,868	1.1	88.0	9.7	1.3	0.0	52.1	562
2004	225	25,820	4.2	40.2	55.0	0.6	0.0	44.3	586
2005	958	13,529	0.6	86.0	12.7	0..7	0.0	48.0	561
2006 [b]	1,320	39,151	4.6	43.7	51.4	0.4	0.0	50.5	559
2007	1,134	61,228	0.0	79.1	19.2	1.8	0.0	55.6	549
2008	585	57,033	0.8	34.6	60.5	4.2	0.0	47.3	580
2009	1,101	91,158	2.6	69.3	27.1	1.1	0.0	55.4	573
2010	1,174	106,610	1.0	66.8	31.0	1.2	0.0	46.9	566
2011	903	93,760	1.6	61.2	36.3	1.0	0.0	50.2	567
2012	921	61,140	0.6	72.8	24.9	1.7	0.0	54.3	570
2013	667	58,079	0.0	43.0	55.9	0.9	0.2	54.6	568

Note: Commercial chum salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

Table 85.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W5 commercial gillnet fishery, 1984–2013.

Year	Sample Size	Total Harvest	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	Percent Females	Mean Length (mm)
1984 [a]	459	14,340						
1985 [a]	270	4,784						
1986	353	10,356	0.4	69.3	29.4	1.0	48.5	588
1987	430	20,381	0.0	68.2	31.8	0.0	46.7	589
1988	469	33,059	0.3	17.4	80.5	1.7	54.4	606
1989	543	13,622	0.1	45.2	52.5	2.2	39.4	597
1990	359	13,194	0.4	77.6	21.8	0.2	43.9	583
1991	565	15,892	2.0	79.8	18.2	0.0	52.3	571
1992	418	18,520	0.0	14.5	83.5	2.0	59.4	573
1993 [a]	191	10,657						
1994 [a]	512	28,477						
1995 [a]	355	19,832						
1996 [a]	190	11,093						
1997	805	11,729	0.6	30.0	69.0	0.4	51.9	585
1998	469	14,155	0.5	85.7	13.3	0.5	48.6	576
1999	455	11,562	0.2	77.0	22.5	0.3	55.0	579
2000	598	7,450	0.0	42.5	57.1	0.4	60.4	601
2001	647	3,412	0.2	56.9	42.9	0.0	61.4	583
2002	234	3,799	0.3	50.3	47.9	15.0	56.1	590
2003	296	5,593	0.0	88.0	9.3	2.7	44.1	564
2004 [a]	76	5,965						
2005 [a]	105	2,568						
2006 [ab]	193	11,568						
2007 [a]	543	7,853						
2008 [c]		10,408						
2009	1,268	16,985	2.1	40.1	55.6	2.3	37.9	579
2010	752	26,914	1.8	74.5	21.0	2.6	36.2	564
2011	644	13,190	0.2	43.7	55.2	1.0	33.1	567
2012	1,288	24,487	0.3	65.7	30.8	3.2	0.0	570
2013	782	12,651	0.0	38.6	58.7	2.7	40.1	572

Note: Commercial chum salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] Samples were not appropriate for estimating ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] ASL Samples were not collected.

Table 86.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Middle Fork Goodnews River weir, 1991–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	Percent Females	Mean Length (mm)
1991	291	31,644	0.0	73.1	26.9	0.0	40.5	566
1992 [a]	493	22,023						
1993 [a]	236	14,952						
1994 [a]	207	34,849						
1995 [a]	280	33,699						
1996 [a]	311	40,450						
1997	526	17,369	0.4	31.5	67.8	0.2	44.4	589
1998	705	28,832	0.3	86.1	13.4	0.2	49.9	578
1999	672	19,513	0.0	65.4	34.3	0.3	49.9	587
2000 [a]	418	13,791						
2001	768	26,820	0.7	70.6	28.7	0.1	55.5	587
2002	725	30,300	2.9	37.1	58.6	1.4	55.0	600
2003	556	21,637	0.7	84.5	12.6	2.3	45.6	572
2004	1,220	31,616	4.2	59.3	36.4	0.1	51.8	579
2005	907	26,690	1.5	83.4	15.0	0.1	52.9	571
2006	776	54,699	1.3	69.7	28.6	0.3	23.9	574
2007	865	49,285	0.8	54.1	44.2	0.9	51.4	570
2008	1,241	44,699	0.3	44.9	49.0	5.7	61.5	578
2009 [a]	196	19,715						
2010	189	26,687	2.1	74.5	22.7	0.7	59.7	564
2011	447	19,974	0.6	44.2	52.6	2.6	43.0	572
2012 [a]	347	10,723						
2013	494	28,091	0.0	32.8	64.5	2.7	44.4	585

[a] Sampling was not appropriate for estimating ASL composition for the season.

Table 87.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kanektok River weir, 2002–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	Percent Females	Mean Length (mm)
2002	738	42,009	2.5	43.1	53.0	1.4	57.5	586
2003	733	40,066	0.8	86.8	10.4	1.9	49.6	566
2004	736	46,444	5.7	49.9	44.2	0.3	48.2	568
2005 [a]	894	53,580						
2006 [b]								
2007	1,121	133,215	0.1	63.3	34.7	2.0	48.4	566
2008 [a]	725	54,024						
2009	631	51,652	0.6	68.0	29.4	2.1	35.9	591
2010	663	62,567	1.2	65.1	32.3	1.4	51.5	573
2011	936	50,908	0.2	44.7	53.8	1.3	51.9	570
2012	382	24,173	0.0	56.1	38.1	5.8	47.7	582
2013	573	43,040	0.0	26.0	70.3	3.7	45.1	582

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Weir did not operate.

Table 88.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kwethluk River weir, 1992 and 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent Females	Mean Length (mm)
1992	1,198	30,595	1.8	59.2	36.7	2.3	0.0	57.7	537
2000	995	11,691	0.7	62.8	36.0	0.5	0.0	49.5	570
2001 [ab]	7	353							
2002	1,066	35,854	5.4	71.2	22.1	1.3	0.0	47.2	582
2003	1,530	41,812	1.9	85.0	12.1	0.9	0.0	45.3	562
2004	1,309	38,646	18.3	40.7	40.9	0.1	0.0	42.9	559
2005 [c]									
2006	1,201	47,491	1.5	48.4	49.7	0.4	0.0	41.3	567
2007	1,336	54,913	1.8	71.5	23.6	3.2	0.0	45.2	558
2008	983	20,030	1.2	22.3	74.4	2.1	0.0	43.5	583
2009	1,004	32,191	2.7	79.5	16.2	1.5	0.0	47.8	557
2010	909	19,235	2.8	63.5	33.1	0.7	0.0	40.8	570
2011	910	18,329	0.3	42.0	55.7	2.0	0.0	37.5	563
2012 [bd]	451	4,417	1.0	68.9	26.5	3.7	0.0	33.5	570
2013 [bd]	317	16,290	0.0	68.7	28.8	2.4	0.1	38.4	567

Note: The Kwethluk River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Weir did not operate for majority of the season. Escapement shown is partial.

[c] Weir did not operate.

[d] Samples were applied to observed escapement.

Table 89.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Tuluksak River weir, 1991–1994 and 2001–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent Females	Mean Length (mm)
1991	1,083	7,675	4.2	62.0	33.6	0.2	0.0	47.4	541
1992	1,206	11,183	1.0	51.2	45.7	2.1	0.0	51.6	557
1993	1,163	13,804	2.1	36.4	56.5	5.1	0.0	50.1	545
1994	851	15,723	0.6	49.8	44.9	4.7	0.0	51.0	553
2001	808	19,310	0.4	75.1	24.5	0.0	0.0	43.6	564
2002	928	9,957	7.3	53.0	39.1	0.6	0.0	44.3	564
2003	1,103	11,725	2.4	89.5	7.1	1.0	0.0	31.1	556
2004	1,186	11,796	19.4	35.8	44.6	0.3	0.0	42.7	562
2005	1,147	35,696	4.1	93.1	2.6	0.3	0.0	40.3	565
2006	1,056	25,652	3.1	46.3	50.5	0.1	0.0	48.4	551
2007	1,023	17,286	3.0	74.1	20.7	2.1	0.0	32.2	554
2008	1,296	12,550	0.7	16.8	78.1	4.3	0.0	42.7	566
2009	1,122	13,671	3.6	82.4	12.0	2.0	0.0	33.3	548
2010	930	13,042	2.8	68.3	28.3	0.4	0.1	31.8	555
2011	672	9,828	0.4	51.7	47.0	0.9	0.0	35.8	545
2012 [a]	136	16,981							
2013	540	12,894	0.0	44.0	54.1	1.9	0.0	37.0	553

Note: The Tuluksak River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Sampling was not appropriate for estimating ASL composition for the season.

Table 90.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the George River weir, 1996–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent Females	Mean Length (mm)
1996	765	19,397	1.6	59.9	36.8	1.7	0.0	46.1	582
1997	641	5,907	0.7	51.4	46.3	1.6	0.0	42.8	562
1998 [ab]	322	6,391							
1999 [a]	611	11,553							
2000	235	3,492	1.4	46.7	50.4	1.6	0.0	43.5	580
2001	782	11,601	0.0	66.3	33.7	0.0	0.0	53.8	556
2002	955	6,544	6.4	46.3	45.8	1.5	0.0	47.3	571
2003	597	33,663	1.5	88.2	10.0	0.3	0.0	49.7	540
2004	923	14,408	9.2	38.6	52.0	0.2	0.0	47.9	555
2005	985	14,828	5.2	89.8	4.5	0.6	0.0	46.8	539
2006	934	41,467	3.5	50.8	45.5	0.2	0.0	57.5	542
2007 [a]	705	55,843							
2008	787	29,979	0.6	17.4	78.8	3.2	0.0	48.4	551
2009	690	7,941	10.6	52.7	30.6	6.1	0.0	50.0	545
2010	1,067	26,154	3.9	87.8	7.5	0.7	0.1	51.6	531
2011	1,023	44,641	0.8	50.0	48.8	0.4	0.0	48.2	547
2012	672	34,336	0.0	58.2	33.8	7.9	0.0	52.4	553
2013	547	36,874	0.6	36.9	61.0	1.4	0.0	55.1	549

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Weir did not operate for much of the chum salmon run. Escapement shown is partial.

Table 91.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Tatlawiksuk River weir, 1998–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent Females	Mean Length (mm)
1998 [ab]	330	5,726							
1999	856	9,600	0.1	72.1	27.5	0.3	0.0	52.6	575
2000	705	6,965	2.0	57.6	39.9	0.5	0.0	48.2	577
2001	847	23,719	0.4	65.7	33.5	0.4	0.0	51.0	571
2002	1,346	24,542	6.7	58.6	33.2	1.5	0.0	50.3	567
2003 [ab]	57	479							
2004	1,299	21,245	14.6	42.1	43.1	0.2	0.0	38.7	565
2005	1,075	55,723	5.2	89.4	5.4	0.0	0.0	58.1	557
2006	935	32,303	1.8	55.6	42.3	0.3	0.0	42.1	560
2007	920	83,246	3.3	80.2	15.8	0.6	0.0	52.3	549
2008	799	30,896	0.5	21.3	76.2	2.0	0.0	52.3	559
2009	829	19,975	7.8	64.4	23.9	3.8	0.0	51.9	540
2010	1,082	36,702	8.9	82.7	7.9	0.5	0.0	51.6	551
2011	938	84,204	0.5	67.9	31.3	0.3	0.0	52.5	554
2012	593	44,572	0.6	45.7	49.2	4.5	0.0	54.7	560
2013	533	32,277	0.1	40.1	57.5	2.2	0.2	50.0	558

Table 92.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kogrukluk River weir, 1976–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	Percent Females	Mean Length (mm)
1976	219	8,117	0.3	37.8	60.5	1.4	18.7	602
1977 [ab]		10,388						
1978	322	48,125	0.8	49.9	49.3	0.0	44.2	597
1979 [c]	59	18,599						
1980 [b]	83	6,323	0.0	90.5	9.5	0.0	10.2	572
1981	191	57,374	0.0	15.0	84.4	0.6	40.0	601
1982	259	64,077	0.0	59.9	40.0	0.1	48.8	577
1983 [bd]	484	3,257						
1984	1,252	41,484	0.0	81.4	17.4	1.3	36.3	572
1985	874	15,005	0.2	27.9	71.3	0.5	41.7	574
1986	566	14,693	0.5	71.5	25.7	2.3	39.3	574
1987 [bc]	160	2,365						
1988 [c]	665	39,543						
1989 [bc]	147	15,543						
1990	371	26,765	1.4	65.5	31.7	1.4	20.9	585
1991	293	24,188	0.4	57.9	41.6	0.0	15.8	580
1992	362	34,105	2.7	42.9	53.7	0.8	33.0	582
1993	361	31,901	0.0	34.0	61.0	5.0	18.4	589
1994 [bc]	125	23,147						
1995	848	31,265	1.4	45.9	51.8	0.8	13.3	587
1996	827	48,496	1.8	67.8	28.8	1.6	15.4	605
1997	641	7,958	0.4	42.9	56.0	0.6	4.1	603
1998 [bc]	193	13,013						
1999	737	13,820	0.0	49.3	50.4	0.3	8.5	593
2000	583	11,491	1.2	67.4	31.0	0.3	15.3	586
2001	738	30,571	0.5	58.5	41.0	0.0	17.4	583
2002	999	51,570	0.2	75.7	23.1	1.1	15.1	579
2003	1,014	23,412	1.8	65.9	31.7	0.6	8.9	573
2004	1,033	24,201	9.2	59.4	30.9	0.5	9.2	565
2005	1,198	197,723	4.0	90.5	5.6	0.0	45.1	545
2006	1,275	180,601	1.6	62.2	36.0	0.3	38.2	550
2007	640	49,509	2.9	59.2	34.9	3.0	37.6	555
2008	524	44,978	1.5	53.8	42.0	2.6	34.9	560
2009	806	84,940	2.6	74.8	21.8	0.8	44..8	561
2010	746	63,582	2.8	62.2	34.1	0.8	45.3	553
2011	788	76,386	1.8	64.2	32.7	1.2	42.0	552
2012 [be]	229	14,296	0.9	71.4	26.0	1.7	23.2	550
2013	661	66,834	0.1	55.3	43.9	0.7	46.8	555

[a] ASL data were not collected.

[b] Weir was inoperable for much of the season. Escapement shown is partial.

[c] Sampling was not appropriate for estimating ASL composition for the season.

[d] Historical data summary not available.

[e] Samples were applied to observed escapement.

Table 93.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Takotna River weir, 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent Females	Mean Length (mm)
2000	365	1,265	2.7	61.7	35.2	0.4	0.0	57.7	559
2001	573	5,411	0.1	75.1	24.7	0.2	0.0	50.3	567
2002	824	4,399	2.5	45.6	50.7	1.2	0.0	47.0	579
2003	564	3,388	5.0	83.6	10.9	0.5	0.0	47.7	559
2004	343	1,633	14.5	47.5	38.1	0.0	0.0	49.9	551
2005	836	6,488	8.6	89.9	1.5	0.0	0.0	51.3	551
2006	1,169	12,652	2.2	62.2	35.5	0.1	0.0	46.9	555
2007	946	8,874	3.4	60.1	33.7	2.7	0.0	47.8	547
2008	601	5,704	0.0	32.4	61.3	6.3	0.0	49.7	552
2009	948	2,528	3.6	75.8	18.3	2.4	0.0	49.4	556
2010	1,023	4,057	10.4	79.6	9.6	0.5	0.0	55.0	546
2011	980	8,413	1.9	60.7	37.0	0.4	0.0	55.2	545
2012	673	6,050	1.2	43.9	50.0	4.9	0.0	48.4	555
2013	664	6,412	0.3	38.4	56.3	4.8	0.1	50.5	551

Table 94.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W1 commercial gillnet fishery, 1984–2013.

Year	Sample Size	Total Harvest	Percent by Age Class													Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(1.5)	(2.4)	(3.3)		
1984	296	48,575	0.3	0.3	6.8	9.4	0.3	56.9	6.8	0.6	18.6	0.0	0.0	0.0	0.0	52.6	N/A
1985	893	106,647	0.0	0.0	2.7	5.7	1.1	65.6	10.9	1.1	12.9	0.0	0.0	0.0	0.0	55.9	N/A
1986	535	95,433	0.0	0.0	2.4	4.6	1.3	64.4	11.6	1.3	14.5	0.0	0.0	0.0	0.0	50.3	N/A
1987	567	136,602	0.0	0.0	1.4	6.7	0.4	75.7	1.3	1.3	13.2	0.0	0.0	0.0	0.0	53.0	N/A
1988	453	92,025	0.0	0.0	0.2	1.4	0.0	73.0	1.4	2.2	21.0	0.0	0.0	0.4	0.4	56.5	N/A
1989	175	42,747	0.0	0.0	0.0	3.4	0.0	59.0	10.3	4.5	21.1	0.0	0.0	1.1	0.6	55.5	590
1990	250	84,870	0.0	0.4	0.4	3.6	0.8	77.2	4.8	2.8	10.0	0.0	0.0	0.0	0.0	51.2	576
1991	513	108,946	0.3	0.0	1.6	10.0	0.8	81.1	0.8	2.0	3.5	0.0	0.0	0.0	0.0	49.8	N/A
1992	504	92,218	0.0	0.0	2.4	6.1	0.8	69.2	3.2	6.3	12.0	0.0	0.0	0.0	0.0	51.1	553
1993	186	27,008	0.0	0.0	1.6	22.1	1.1	55.3	9.1	2.2	8.6	0.0	0.0	0.0	0.0	50.0	557
1994	173	49,365	0.0	0.0	0.6	1.8	0.0	72.0	0.6	1.8	22.0	0.0	0.0	1.2	0.0	49.7	571
1995	419	92,500	0.0	0.0 [a]	1.8	7.8	0.3	81.8	1.7	2.5	4.0	0.0	0.0	0.0	0.0	58.3	564
1996	520	33,878	0.2	0.3	6.3	3.5	0.0	82.1	1.5	1.5	4.7	0.0	0.0	0.0	0.0	42.9	566
1997	89	21,989	0.0	0.0	0.0	25.8	0.0	50.6	11.2	2.2	10.1	0.0	0.0	0.0	0.0	50.6	566
1998	493	60,906	0.0	0.0	1.4	5.9	0.1	62.6	9.4	1.5	18.7	0.0	0.0	0.4	0.0	49.6	563
1999	189	16,976	0.0	0.0	0.0	4.2	0.0	65.6	5.8	5.3	19.0	0.0	0.0	0.0	0.0	58.7	578
2000	170	4,130	0.0	0.0	2.9	9.4	0.0	60.0	2.4	0.0	25.3	0.0	0.0	0.0	0.0	57.1	574
2001 [b]		84															
2002 [b]		84															
2003 [b]		282															
2004 [c]	416	8,532															
2005	551	27,645	0.0	0.0	1.4	8.9	0.0	80.7	0.8	1.2	7.0	0.0	0.0	0.0	0.0	54.3	562
2006 [cd]	179	12,618															572
2007 [b]		703															
2008	509	15,601	0.0	0.0	2.5	5.2	0.0	84.5	0.1	4.6	3.0	0.0	0.0	0.0	0.0	53.2	550
2009	525	25,673	0.0	0.0	6.9	6.3	0.0	67.4	1.8	12.8	4.8	0.0	0.0	0.0	0.0	52.3	557
2010	1,120	22,428	0.0	0.0	3.8	17.3	1.9	66.3	0.3	8.9	1.3	0.0	0.0	0.0	0.0	52.5	564
2011	682	13,497	0.0	0.0	13.3	2.5	2.6	64.6	0.6	13.1	2.8	0.0	0.1	0.3	0.0	54.7	562
2012	315	2,857	0.0	0.0	4.8	5.7	1.5	72.7	0.8	10.8	3.5	0.0	0.3	0.0	0.0	49.3	552
2013	183	768	0.0	0.0	4.4	7.1	0.0	47.5	1.6	4.4	29.5	0.5	0.0	1.1	3.8	47.0	555

Note: Harvest data are from Districts W1 and W2 combined. The commercial sockeye salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Age class was represented in samples but percent composition was <0.05.

[b] ASL data were not collected.

[c] Sampling was not appropriate for estimating ASL composition for the season.

[d] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

Table 95.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W4 commercial gillnet fishery, 1990–2013.

Year	Sample Size	Total Harvest	Percent by Age Class												Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(2.4)	(3.3)		
1990	573	83,681	0.2	0.1	6.7	49.3	0.3	41.7	0.1	0.3	1.2	0.0	0.0	0.0	44.0	N/A
1991	420	53,657	0.2	0.0	11.0	10.8	0.9	74.2	0.0	2.6	0.2	0.0	0.0	0.0	57.9	N/A
1992 [a]	255	60,929														
1993	535	80,934	0.9	0.0	8.0	24.2	3.5	55.3	1.4	4.8	1.9	0.0	0.0	0.0	42.6	N/A
1994	527	72,314	0.0	0.0	10.0	14.0	0.3	68.4	0.2	4.4	2.6	0.0	0.1	0.0	46.2	N/A
1995	620	68,194	0.7	0.0	0.0	37.6	0.0	49.8	6.3	4.3	1.3	0.0	0.0	0.0	46.8	540
1996	509	57,665	0.2	0.0	5.8	16.6	0.0	68.1	2.5	0.6	5.8	0.0	0.0	0.3	57.0	559
1997	952	69,562	0.2	0.0	3.2	17.9	3.4	55.2	1.3	10.4	8.5	0.0	0.0	0.0	51.1	561
1998	757	41,382	0.3	0.0	4.0	23.4	0.4	65.3	2.4	1.2	2.9	0.0	0.2	0.0	53.0	544
1999	539	41,315	0.0	0.0	1.7	46.2	0.3	45.4	1.1	3.6	1.7	0.0	0.0	0.0	43.6	545
2000	880	68,557	0.0	0.0	0.6	22.5	0.1	74.1	0.5	0.2	1.9	0.0	0.0	0.0	54.8	559
2001	713	33,807	0.0	0.0	1.0	2.7	0.0 [b]	89.8	0.2	1.8	4.5	0.0	0.0	0.0	44.0	568
2002 [b]	307	17,802	2.6	0.0	0.3	49.7	0.3	38.0	3.0	2.1	3.9	0.0	0.0	0.0	46.1	530
2003	365	33,941	0.0	0.0	0.2	26.5	0.0	66.2	2.8	1.8	2.5	0.0	0.0	0.0	45.7	558
2004	217	34,627	0.0	0.0	2.2	30.9	1.1	59.0	0.6	5.6	0.6	0.0	0.0	0.0	47.1	547
2005	937	68,801	0.1	0.0	2.0	28.6	0.0	66.6	0.5	1.0	1.3	0.0	0.0	0.0	45.8	538
2002 [b]	807	106,308	0.1	0.0	0.9	22.9	0.2	73.2	0.2	2.0	0.4	0.0	0.0	0.0	33.1	528
2007	1,005	109,343	0.0 [c]	0.0	4.4	45.7	0.0	45.8	0.1	2.4	1.6	0.0	0.0	0.0	44.6	524
2008	488	69,743	0.0	0.0	2.5	19.6	0.5	74.1	0.3	2.2	0.8	0.0	0.0	0.0	47.0	542
2009	976	112,153	0.0	0.0	2.4	53.8	0.1	40.5	0.5	1.5	1.2	0.0	0.0	0.0	51.7	540
2010	844	138,362	0.0 [c]	0.0	2.8	14.5	1.2	78.7	0.2	2.0	0.6	0.0	0.0	0.0	49.0	549
2011	602	38,535	0.3	0.0	5.3	29.3	1.6	50.1	5.3	4.2	3.5	0.2	0.2	0.0	48.9	541
2012	836	37,688	0.2	0.0	2.3	12.2	0.2	78.3	0.2	1.2	5.1	0.0	0.2	0.0	52.1	540
2013	602	26,393	0.0	0.3	1.7	60.2	0.4	29.8	1.4	2.2	4.0	0.0	0.0	0.0	54.3	520

Note: Commercial sockeye salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] Age class was represented in samples but percent composition was <0.05.

Table 96.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W5 commercial gillnet fishery, 1985–2013.

Year	Sample Size	Total Harvest	Percent by Age Class												Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(2.4)	(3.3)	(3.4)		
1985	485	6,698	0.0	0.0	0.0	25.1	0.0	73.8	1.1	0.0	0.0	0.0	0.0	0.0	46.8	570
1986	548	25,112	0.0	0.0	0.0	7.6	0.0	91.8	0.7	0.0	0.0	0.0	0.0	0.0	43.5	586
1987	545	27,758	0.0	0.0	0.0	7.0	0.0	93.0	0.0	0.0	0.0	0.0	0.0	0.0	51.9	584
1988	738	36,368	0.1	0.0	0.4	3.9	0.4	90.0	0.4	4.5	0.2	0.1	0.0	0.0	43.6	597
1989	577	19,299	0.0	0.0	0.0	8.9	0.3	86.0	0.5	2.9	1.4	0.0	0.0	0.0	48.2	584
1990	458	35,823	0.0	0.0	5.9	11.2	0.5	63.7	8.0	1.5	9.3	0.0	0.0	0.0	33.7	575
1991	564	39,838	0.1	0.0	2.3	3.1	0.9	78.7	4.6	0.9	9.5	0.0	0.0	0.0	45.2	564
1992	573	39,194	4.6	0.6	9.1	23.3	1.4	53.4	0.9	3.5	2.5	0.8	0.0	0.0	42.6	575
1993	489	59,293	0.2	0.0	6.5	26.8	0.7	53.3	2.5	1.6	8.1	0.4	0.0	0.0	54.4	560
1994	485	69,490	0.0	0.0	5.3	1.8	0.2	83.4	0.6	1.8	6.8	0.1	0.0	0.0	53.4	567
1995 [a]	369	37,351														
1996 [a]	343	30,717														
1997	833	31,451	0.4	0.0	2.5	13.8	1.4	56.4	3.2	6.8	14.9	0.6	0.0	0.0	48.6	563
1998	840	27,161	0.0	0.0	3.1	8.9	0.1	72.9	3.9	0.5	10.4	0.1	0.2	0.0	45.7	555
1999	532	22,910	0.0	0.0	1.3	18.5	0.0	68.9	2.2	3.5	5.7	0.0	0.0	0.0	41.3	556
2000	715	37,252	0.0	0.0	1.1	7.5	0.0	82.1	5.1	0.0	4.3	0.0	0.0	0.0	40.2	575
2001	576	25,654	0.0	0.0	0.4	2.2	0.0	90.3	0.0	2.2	5.0	0.0	0.0	0.0	51.0	581
2002	539	6,304	0.0	0.0	2.8	19.4	0.0	51.6	6.5	8.9	10.7	0.3	0.0	0.0	46.4	562
2003	329	29,423	0.0	0.0	0.4	7.2	0.0	71.9	2.6	1.4	16.6	0.0	0.0	0.0	32.5	579
2004	182	20,523	0.0	0.0	0.0	21.1	0.0	62.6	6.8	1.7	7.9	0.0	0.0	0.0	29.8	547
2005 [a]	191	23,933														
2006 [ab]	95	29,857														
2007	705	43,766	0.0	0.0	4.2	10.0	0.0	71.4	2.0	3.6	8.7	0.0	0.0	0.0	37.7	549
2008 [c]		27,236														
2009	1,353	32,544	0.1	0.0	3.9	14.0	1.3	64.2	3.4	2.8	10.4	0.0	0.0	0.0	41.9	557
2010	685	41,074	0.0	0.0	2.2	13.2	1.1	79.6	0.8	2.3	0.8	0.0	0.0	0.0	36.9	550
2011	607	24,463	0.3	0.0	3.2	13.3	0.8	74.0	3.7	1.7	2.9	0.0	0.0	0.0	42.3	553
2012	1,217	50,635	0.0	0.0	0.7	7.7	0.3	70.3	5.1	1.6	13.8	0.0	0.4	0.0	46.1	550
2013	735	24,521	0.0	0.0	3.3	3.4	0.2	42.2	1.5	1.9	43.1	0.8	3.3	0.4	45.5	556

Note: Commercial sockeye salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] ASL data were not collected.

Table 97.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Middle Fork Goodnews River weir, 1991–2013.

	Sample	Total	Percent by Age Class											Percent	Mean
Year	Size	Escapement	(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(2.4)	(3.3)	Females	Length (mm)
1991 [a]	272	47,397														
1992 [a]	204	27,268														
1993 [a]	312	26,452														
1994 [a]	160	50,801														
1995	454	39,009	0.0	0.0	0.2	13.7	0.0	76.8	2.8	2.7	3.8	0.0	0.0	0.0	50.4	543
1996 [a]	246	58,290														
1997	733	35,530	0.2	0.0	1.4	20.9	0.7	63.2	2.4	2.5	8.2	0.0	0.4	0.0	54.0	543
1998 [a]	542	49,513														
1999	789	48,205	0.0	0.0	1.2	11.6	0.2	77.9	2.0	1.7	5.1	0.0	0.3	0.0	48.4	548
2000	607	32,341	0.0	0.0	1.3	2.0	0.0	91.2	1.4	1.4	2.7	0.0	0.0	0.0	54.1	560
2001	432	21,024	0.0	0.0	0.9	2.1	0.0	79.2	0.6	9.6	7.7	0.0	0.0	0.0	48.9	572
2002	485	22,101	0.0	0.0	0.5	54.5	0.2	27.6	8.8	2.6	5.4	0.0	0.2	0.1	55.7	520
2003	657	44,387	0.0	0.0	0.6	8.5	0.0	86.6	0.4	1.7	2.3	0.0	0.0	0.0	45.6	575
2004	806	55,926	0.0	0.0	1.4	31.8	0.0	55.8	2.9	5.6	2.5	0.0	0.0	0.0	54.5	540
2005	955	113,809	0.0 [b]	0.0	0.1	13.5	0.0	79.0	2.7	1.1	3.6	0.0	0.0	0.0	54.3	543
2006	576	126,772	0.0	0.0	2.4	18.7	0.0	70.4	0.7	3.5	4.3	0.0	0.0	0.0	57.1	533
2007	727	72,282	0.6	0.0	8.1	12.2	0.4	70.0	1.6	3.0	4.2	0.0	0.0	0.0	50.1	550
2008	512	50,459	0.0	0.0	4.3	9.0	0.2	78.7	1.0	3.3	3.4	0.0	0.0	0.0	56.8	540
2009 [a]	161	25,465														540
2010	307	35,762	0.0	0.0	2.0	4.6	0.0	85.8	1.0	2.6	3.9	0.0	0.0	0.0	54.6	539
2011	440	17,946	0.0	0.0	3.0	6.4	0.2	84.1	0.2	3.9	2.0	0.0	0.2	0.0	56.1	550
2012	331	30,472	0.0	0.0	1.5	6.7	0.0	77.2	4.5	2.6	7.0	0.4	0.0	0.0	56.0	539
2013	625	23,243	0.1	0.0	1.8	6.8	0.0	52.5	3.1	6.4	21.4	0.0	2.6	5.3	56.3	549

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Age class was represented in samples but percent composition was <0.05.

Table 98.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Kanektok River weir, 2002–2013.

	Sample	Total	Percent by Age Class											Percent	Mean
Year	Size	Escapement	(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(2.4)	(3.3)	Females	Length (mm)
2002	663	58,326	0.0	0.0	0.5	56.2	0.3	34.7	1.1	2.3	4.1	0.5	0.3	57.7	529
2003	403	127,471	0.0	0.0	0.2	26.6	0.0	69.0	0.2	2.0	2.0	0.0	0.0	50.6	551
2004	470	102,867	0.2	0.0	0.2	48.3	0.0	46.5	3.3	1.0	0.5	0.0	0.0	43.5	530
2005 [a]	688	242,208													
2006 [b]															
2007	793	307,750	0.5	0.0	2.9	45.3	0.0	48.3	0.0	2.2	0.8	0.0	0.0	36.0	542
2008 [a]	307	141,388												36.8	558
2009	585	272,483	0.0	0.0	1.9	62.1	0.0	34.9	0.4	0.1	0.5	0.0	0.0	51.7	538
2010	819	202,643	0.0	0.0	0.8	8.5	0.4	87.8	0.2	2.2	0.1	0.0	0.0	45.8	563
2011	697	84,805	0.9	0.0	3.9	40.0	0.2	48.0	4.1	1.7	1.1	0.0	0.1	50.8	543
2012	575	88,800	0.0	0.0	1.2	18.3	0.0	75.4	0.5	0.5	4.2	0.0	0.0	52.8	546
2013	601	128,761	0.0	0.0	0.2	71.1	0.0	24.6	1.1	2.4	0.6	0.0	0.0	55.7	519

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Weir did not operate.

Table 99.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Kwethluk River weir, 1992 and 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class											Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(2.4)	(3.3)		
1992	272	1,316	0.7	0.0	6.2	13.7	1.3	68.3	1.8	4.1	3.9	0.0	0.0	59.6	518
2000 [a]	155	1,049													
2001 [b]															
2002 [c]	36	272													
2003	391	2,928	0.0	0.0	2.3	19.9	0.0	71.7	0.2	2.4	3.6	0.0	0.0	51.9	568
2004 [c]	118	3,490													
2005 [b]															
2006 [c]	118	6,733													
2007	201	5,262	0.0	0.0	0.7	34.4	0.0	60.9	1.5	1.3	1.3	0.0	0.0	49.7	560
2008	78	2,451	0.0	0.0	1.3	20.5	0.0	76.9	0.0	0.0	1.3	0.0	0.0	65.4	546
2009	222	4,230	0.3	0.0	6.5	22.3	0.0	61.7	2.3	2.6	4.2	0.0	0.0	65.9	540
2010	495	4,239	0.0	0.0	4.1	15.9	0.6	73.7	0.6	2.5	2.7	0.0	0.0	51.7	555
2011	100	2,031	0.0	0.0	12.0	4.0	5.0	59.0	1.0	9.0	9.0	1.0	0.0	57.0	560
2012 [cd]	16	250													
2013 [cd]	3	604													

Note: The Kwethluk River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Samples were not summarized.

[b] Weir did not operate.

[c] Sampling was not appropriate for estimating ASL composition for the season.

[d] Weir was inoperable for much of the season. Escapement shown is partial.

Table 100.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Tuluksak River weir, 1991–1994 and 2001–2013.

Year	Sample Size	Total Escapement	Percent by Age Class											Percent Females	Mean Length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(2.4)	(3.3)		
1991	20	34	0.0	0.0	0.0	30.0	0.0	30.0	25.0	5.0	10.0	0.0	0.0	35.0	552
1992	29	129	3.4	0.0	3.4	10.3	0.0	82.8	0.0	0.0	0.0	0.0	0.0	37.9	563
1993	33	88	3.0	0.0	12.2	24.3	0.0	54.6	0.0	0.0	6.1	0.0	0.0	48.5	522
1994	18	82	0.0	0.0	0.0	27.8	0.0	55.6	0.0	0.0	16.7	0.0	0.0	83.3	516
2001 [a]		137													
2002 [b]	9	82													
2003 [b]	43	288													
2004 [a]		136													
2005 [a]		642													
2006 [a]		985													
2007	65	352	0.0	0.0	0.0	21.5	0.0	75.4	0.0	1.5	1.6	0.0	0.0	40.0	560
2008	90	188	0.0	0.0	0.0	15.6	0.0	68.9	1.1	12.2	2.2	0.0	0.0	53.3	553
2009	66	686	0.0	0.0	1.5	32.2	0.0	63.3	1.6	1.5	0.0	0.0	0.0	49.6	554
2010	54	437	1.9	0.0	0.0	5.6	0.0	66.7	0.0	9.3	16.7	0.0	0.0	66.7	537
2011 [b]	16	126													
2012 [b]	1	187													
2013 [b]	6	392													

Note: The Tuluksak River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] ASL samples were not collected.

[b] Sampling was not appropriate for estimating ASL composition for the season.

Table 101.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W1 commercial gillnet fishery, 1984–2013.

Year	Sample Size	Total Harvest	Percent by Age Class (1.1)	(2.1)	(3.1)	(4.1)	Percent Females	Mean Length (mm)
1984	1,333	623,447	4.4	92.5	3.1	0.0	48.2	N/A
1985	1,119	335,606	8.5	86.8	4.7	0.0	45.8	N/A
1986	841	659,988	4.8	92.0	3.2	0.0	46.1	N/A
1987	820	399,467	7.2	76.9	15.9	0.0	53.1	N/A
1988	1,427	524,296	4.4	94.1	1.5	0.0	50.1	N/A
1989	743	479,856	8.9	88.3	2.8	0.0	45.5	N/A
1990	389	410,332	4.8	90	5.2	0.0	43.1	N/A
1991	573	500,935	4.7	87.4	7.9	0.0	33.8	554
1992	804	666,170	13.5	81.6	4.9	0.0	50.3	563
1993	540	610,739	5.8	91.2	3.0	0.0	48.1	549
1994	826	724,689	6.7	83.7	9.6	0.0	39.5	566
1995	565	471,461	12.3	79.3	8.4	0.0	44.7	558
1996	666	937,299	4.3	94.4	1.3	0.0	48.6	570
1997 [a]	324	130,803						
1998	1,194	210,481	4.9	93.0	2.1	0.0	49.5	572
1999	151	23,593	4.6	82.1	13.2	0.0	43.7	550
2000	2,616	261,379	3.5	94.4	2.1	0.0	53.2	555
2001	422	192,998	6.7	82.6	10.8	0.0	56.8	573
2002	428	83,463	1.0	93.2	5.8	0.0	51.7	572
2003 [b]		284,064						
2004	662	435,407	1.1	89.1	9.8	0.0	48.2	550
2005	412	142,319	7.3	83.5	9.2	0.0	50.2	552
2006	411	185,598	14.1	82.2	3.8	0.0	50.7	539
2007	448	141,049	5.0	90.5	4.5	0.0	53.5	548
2008	493	142,862	5.6	78.3	16.0	0.0	50.4	554
2009	669	104,546	5.0	87.4	7.5	0.0	50.0	563
2010	425	58,031	7.7	89.1	3.2	0.0	51.3	549
2011	667	74,122	15.1	79.3	5.5	0.0	48.6	555
2012	702	86,389	15.8	78.8	5.4	0.1	45.7	522
2013	351	114,069	6.1	81.3	12.6	0.0	53.2	560

Note: Harvest data are from Districts W1 and W2 combined. The commercial coho salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] ASL data were not collected.

Table 102.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W4 commercial gillnet fishery, 1990–2013.

Year	Sample Size	Total Harvest	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
1990	607	26,926	5.8	88.4	5.8	42.4	N/A
1991	535	42,571	13.2	74.5	12.3	50.2	N/A
1992	590	86,404	16.9	79.1	4.0	46.6	N/A
1993	300	55,817	3.6	92.5	3.9	45.3	N/A
1994	429	83,912	6.6	89.7	3.7	52.8	N/A
1995	653	66,203	8.6	84.3	7.2	45.0	N/A
1996	556	118,718	6.0	92.5	1.5	43.1	596
1997 [a]	359	32,862					
1998	446	80,183	6.0	93.2	0.9	57.4	601
1999 [b]		6,184					
2000	285	30,529	1.4	97.0	1.6	49.2	580
2001	415	18,531	7.8	85.2	7.0	39.3	596
2002	460	26,695	1.4	89.1	9.6	50.3	599
2003	153	49,833	7.1	82.9	10.1	32.3	582
2004	186	82,398	4.8	94.3	0.9	46.3	573
2005	666	51,708	15.6	79.3	5.1	43.5	564
2006 [c]	377	26,831	13.3	84.8	1.9	48.8	538
2007 [a]	224	34,710					
2008	499	94,257	8.6	87.5	3.9	47.9	568
2009 [a]	198	48,115					
2010	189	13,690	11.6	85.8	2.6	46.4	566
2011	482	27,754	26.8	69.3	3.9	46.9	569
2012	519	31,214	13.1	83.5	3.5	52.4	547
2013	186	21,126	6.5	88.3	5.2	47.3	582

Note: Commercial coho salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] ASL data were not collected.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

Table 103.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W5 commercial gillnet fishery, 1990–2013.

Year	Sample Size	Total Harvest	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
1990	250	7,804	5.2	91.6	3.2	42.8	N/A
1991	430	13,312	7.5	85.4	7.2	24.1	N/A
1992	404	19,875	12.0	85..5	2.6	42.7	N/A
1993	429	20,014	2.9	92.5	4.6	52.4	N/A
1994	415	47,499	9.0	86.5	4.5	48.1	N/A
1995	299	17,875	3.1	92.4	4.5	49.6	N/A
1996	457	43,836	6.3	90.2	3.5	52.3	622
1997 [a]	271	2,983					
1998	315	21,246	9.9	87.7	2.5	52.5	611
1999	205	2,474	10.3	84.9	4.8	47.7	592
2000	439	15,531	0.7	97.6	1.8	52.1	598
2001	414	9,275	4.8	89.6	5.5	47.4	619
2002 [b]		3,041					
2003 [a]	109	12,658					
2004 [c]	163	24,089	12.5	84.2	3.3	38.9	584
2005 [a]	69	11,735					
2006 [b]		12,436					
2007 [b]		13,697					
2008 [b]		22,547					
2009 [a]	43	8,406					
2010	600	4,900	10.6	87.3	2.2	40.7	572
2011	558	13,475	15.4	77.8	6.8	45.1	573
2012	542	25,515	9.8	85.7	4.6	44.6	551
2013	345	21,581	3.0	91.5	5.5	52.3	589

Note: Commercial coho salmon fishery was executed using small mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] ASL data were not collected.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

Table 104.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Middle Fork Goodnews River weir, 1991–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
1991 [a]	182	1,978					
1992 [ab]		150					
1993 [ab]		1,451					
1994 [ab]		309					
1995 [a]	191	5,415	2.5	93.9	3.6	42.0	571
1996 [a]	150	10,869	2.0	93.3	4.0	36.7	608
1997 [b]		13,413					
1998	429	36,596	8.4	89.6	2.0	57.9	605
1999	411	11,545	10.0	88.0	2.0	55.8	590
2000 [a]	419	13,907	1.5	97.9	0.6	48.1	595
2001	439	19,626	7.1	89.0	3.9	50.6	613
2002 [c]	564	27,364	1.4	92.6	6.0	41.7	620
2003	167	52,810	5.0	87.1	7.9	44.0	608
2004	197	47,916	12.2	84.5	3.4	55.8	579
2005 [d]	328	15,683					586
2006	343	15,969	20.0	78.3	1.7	47.8	563
2007	463	20,975	12.7	83.1	4.3	52.4	582
2008	579	36,630	9.2	85.5	5.3	53.0	543
2009	358	20,000	7.4	87.3	5.2	48.2	606
2010	438	23,839	13.1	83.4	3.4	53.6	598
2011	251	23,826	21.1	72.9	6.0	41.8	592
2012 [ad]	262	11,081					
2013 [ad]	132	11,893					

[a] Weir did not operate throughout the entire the coho salmon return. Partial escapement is shown.

[b] ASL data were not collected.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[d] Sampling was not appropriate for estimating ASL composition for the season.

Table 105.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Kwethluk River weir, 1992 and 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
1992 [a]	734	45,605	13.7	83.2	3.1	42.5	562
2000	669	25,610	6.7	92.7	0.6	47.1	558
2001	181	20,723	12.4	85.6	2.0	51.1	597
2002	570	23,298	1.5	92.4	6.1	43.9	594
2003	217	109,163	10.3	88.5	1.1	51.9	586
2004	185	64,216	5.7	92.3	2.0	43.8	559
2005 [b]							
2006	806	25,664	14.2	83.3	2.5	36.9	537
2007	394	20,256	10.7	88.5	0.8	37.0	563
2008	828	49,972	5.7	88.6	5.7	58.0	564
2009	885	21,911	4.8	90.1	5.1	50.6	573
2010 [bc]	55	795					
2011 [bd]	574	4,482	22.5	74.6	3.0	47.4	575
2012 [bd]	543	19,960	21.0	76.4	2.6	51.5	544
2013 [bc]	147	2,861					

Note: The Kwethluk River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[b] Weir did not operate through coho season. Escapement, if shown, is partial.

[c] Sampling was not appropriate for estimating ASL composition for the season.

[d] Samples were applied to observed escapement.

Table 106.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Tuluksak River weir, 1991–1994 and 2001–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	(4.1)	Percent Females	Mean Length (mm)
1991	647	4,651	0.5	82.4	13.4	0.0	52.5	526
1992	475	7,501	6.4	75.4	18.0	0.0	44.8	552
1993	661	8,328	0.7	92.9	6.3	0.0	43.0	529
1994	312	7,952	2.7	84.3	12.9	0.0	37.5	560
2001	276	23,768	0.3	94.7	5.0	0.0	41.2	582
2002	476	11,487	0.6	85.7	13.6	0.0	57.8	553
2003	187	41,071	2.4	89.8	7.8	0.0	51.8	572
2004	184	20,336	0.7	95.5	3.8	0.0	35.4	541
2005 [a]	361	11,324						564
2006	102	6,111	6.4	91.9	1.7	0.0	50.9	515
2007	539	2,807	9.2	86.1	4.8	0.0	35.5	554
2008	878	7,457	0.8	92.8	6.4	0.0	38.4	547
2009	666	8,137	1.5	90.2	8.3	0.0	34.0	555
2010 [ab]	2	1,216						
2011 [ab]	1	92						
2012	112	4,407	7.0	88.8	3.6	0.6	50	497
2013 [a]	236	6,117						

Note: The Kwethluk River weir is operated by USFWS. Summaries were generated by the ADF&G and may not be consistent with published USFWS data.

[a] Sampling was not appropriate for estimating ASL composition for the season.

[b] Partial escapement is shown, no estimate of missed passage.

Table 107.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the George River weir, 1997–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	(3.2)	(4.1)	Percent Females	Mean Length (mm)
1997	205	9,211	2.2	95.9	1.9	0.0	0.0	42.2	557
1998 [a]									
1999	338	8,914	2.7	69.8	27.4	0.0	0.0	40.9	547
2000	365	11,262	1.3	97.6	1.1	0.0	0.0	43.2	548
2001	371	14,398	0.8	65.6	33.6	0.0	0.0	53.3	557
2002 [b]	72	6,759							
2003	171	33,281	0.9	88.0	11.0	0.0	0.0	52.7	556
2004	191	12,499	1.3	89.8	8.9	0.0	0.0	36.6	538
2005	463	8,200	1.0	80.2	18.8	0.0	0.0	48.6	539
2006	440	11,296	4.4	88.0	7.7	0.0	0.0	50.5	525
2007 [b]	442	29,317							
2008	429	21,931	0.5	63.4	36.2	0.0	0.0	52.3	543
2009	524	12,464	1.6	92.8	5.6	0.0	0.0	44.7	553
2010	559	12,961	2.7	89.6	7.7	0.0	0.0	51.5	545
2011	552	30,028	4.9	90.0	5.0	0.1	0.0	51.2	552
2012	366	15,272	1.9	73.6	24.6	0.0	0.0	48.1	505
2013	275	13,894	5.3	63.0	31.4	0.0	0.2	50.7	562

[a] Weir was inoperable during coho salmon season.

[b] Sampling was not appropriate for estimating ASL composition for the season.

Table 108.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Tatlawiksuk River weir, 1999–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
1999	287	3,449	8.0	79.1	12.9	43.3	550
2000 [a]	188	5,646	0.0	100.0	0.0	39.9	564
2001 [a]	518	5,669	2.2	91.2	6.6	52.1	571
2002	596	11,345	1.2	89.3	9.5	38.7	565
2003 [b]							
2004	361	16,410	3.1	94.4	2.5	50.6	544
2005	476	7,496	4.4	89.7	5.9	48.2	557
2006 [ac]	155	2,362					
2007 [c]	419	8,686					
2008	485	11,065	3.8	84.3	11.9	52.7	542
2009	508	10,148	6.3	83.9	9.8	47.8	551
2010	517	3,521	5.4	92.9	1.7	53.6	534
2011	359	12,927	5.0	87.5	7.5	56.3	560
2012	323	8,070	7.8	90.4	1.8	49.2	516
2013	331	13,076					

[a] Weir did not operate for a portion of the season. No estimates of missed passage. Escapement shown is partial.

[b] Weir did not operate.

[c] Sampling was not appropriate for estimating ASL composition for the season.

Table 109.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Kogrukluk River weir, 1989–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
1989 [ab]	75	1,272					
1990 [b]	173	6,132					
1991	377	9,964	1.8	96.0	2.2	42.5	558
1992 [ab]	158	2,712					
1993 [a]	157	4,395	2.5	94.3	3.1	40.1	564
1994	463	35,050	1.5	90.1	8.3	47.8	581
1995 [a]	364	17,492	4.1	88.5	7.0	39.1	557
1996	639	50,555	3.0	94.9	2.1	37.0	594
1997 [c]		12,238					
1998	455	24,346	1.6	94.1	4.2	40.9	580
1999	343	12,609	2.5	88.1	9.4	17.0	563
2000	604	33,135	1.0	96.9	2.1	30.5	568
2001	504	19,387	1.5	91.3	7.2	49.1	577
2002	423	14,518	0.0	86.4	13.6	30.9	561
2003	161	74,605	1.6	81.5	16.8	40.2	566
2004	176	27,042	0.6	87.6	11.7	29.8	547
2005	447	24,115	6.0	84.9	9.1	49.7	543
2006	426	17,011	10.6	86.5	2.8	55.0	514
2007	394	27,034	3.5	90.7	5.8	44.6	542
2008	455	29,661	2.9	81.4	15.7	55.1	536
2009	520	22,981	1.5	90.2	8.2	56.5	541
2010	549	13,970	4.7	87.4	7.9	49.1	551
2011	535	24,174	4.5	87.3	8.2	51.1	545
2012 [b]	187	13,697					
2013	346	23,590	3.0	86.2	10.8	58.0	548

[a] Partial escapement is shown, no estimate of missed passage.

[b] Sampling was not appropriate for estimating ASL composition for the season.

[c] ASL Samples were not collected.

Table 110.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Takotna River weir, 2000–2013.

Year	Sample Size	Total Escapement	Percent by Age Class (1.1)	(2.1)	(3.1)	Percent Females	Mean Length (mm)
2000	395	3,944	0.3	97.7	2.0	51.9	544
2001	305	2,606	0.3	87.9	11.8	41.3	568
2002	349	3,982	0.2	94.3	5.5	39.5	557
2003	183	7,146	0.9	86.4	12.7	52.1	555
2004	380	3,201	0.3	98.1	1.6	40.9	523
2005	546	2,209	0.2	87.7	12.0	48.1	550
2006	435	5,556	0.4	93.2	3.4	45.0	519
2007	441	2,836	2.2	92.5	5.2	52.3	539
2008	440	2,807	2.2	76.8	21.0	51.4	533
2009	349	2,704	6.2	92.4	1.5	42.6	553
2010	517	3,217	5.4	92.9	1.7	53.6	534
2011	531	4,062	5.3	89.1	5.6	50.9	550
2012	349	1,838	2.1	88.3	9.6	46.2	514
2013	300	4,149	0.7	91.0	8.3	52.6	550

Table 111.–List of years for which Chinook salmon age-sex-length data was collected from Kuskokwim Management Area projects.

Project Type / Name	Years with available ASL data
Commercial Catch	
W1 (Subdistrict 1)	1964-1968, 1971-1975, 1977-1999, 2001, 2004, 2005, 2008-2011
W4 (Subdistrict 4)	1968-1970, 1973-2005, 2007-2013
W5 (Goodnews Bay Subdistrict)	1973, 1974, 1977, 1978, 1980-1995, 1997-2005, 2007, 2009-2013
Subsistence Catch	
Upper Kuskokwim River	1987, 1992, 2001-2003, 2012
Middle Kuskokwim River	1975, 1992, 2001-2003, 2013
Lower Kuskokwim River	1964, 1968, 1970, 1986, 1987, 1991-1995, 2001-2013
Kuskokwim Bay	1975, 2007
Escapement	
Aniak River	1980-1983, 1985, 1989, 1996, 2007
Eek River	1989
George River	1996-2013
Goodnews River (Middle Fork)	1983-1985, 1987-2013
Kanektok River	1983-1987, 1989, 1997, 2002-2005, 2007-2013
Kipchuk River	1989
Kisaralik River	1986, 2001
Kogrukluk River	1968, 1969, 1971-1973, 1976, 1978-2013
Kwethluk River	1989, 1991, 1992, 2000-2004, 2006-2013
NYAC weir	1988
Salmon River (Aniak)	1989, 2006-2008, 2012, 2013
Salmon River (Pitka Fork)	1981, 1982, 1989
Takotna River	2000-2013
Tatlawiksuk River	1998-2013
Tuluksak River	1991-1994, 2001-2013
Mark/Recapture	
Kalskag Fish Wheel	2007
Sport Catch (freshwater)	
Kanektok River	1983, 1985
Sport Catch (marine)	
W5 (Goodnews Bay Subdistrict)	1996
Test Fishing	
Kwegooyuk (Village/City)	1967, 1969, 1972-1976, 1978-1980, 1982, 1983
W1 (Subdistrict 1)	1981, 1993-1995, 2001-2008, 2011-2013

Table 112.–List of years for which chum salmon age-sex-length data was collected from Kuskokwim Management Area projects.

Project Type / Name	Years with available ASL data
Commercial Catch	
Aniak River	1992
W1 (Subdistrict 1)	1966-1968, 1972-2005, 2007-2013
W4 (Subdistrict 4)	1965, 1967-1970, 1973-2005, 2007-2013
W5 (Goodnews Bay Subdistrict)	1974, 1978, 1980-2005, 2007, 2009-2013
Subsistence Catch	
Lower Kuskokwim River	1964, 1984-1986, 1993
Upper Kuskokwim River	1987, 1992
Escapement	
Aniak River	1980-1982, 1984, 1985, 1989, 1994-2011
George River	1996-2013
Goodnews River (Middle Fork)	1983-2013
Kanektok River	1983-1987, 1989, 1997, 2002-2005, 2007-2013
Kisaralik River	1986
Kogrukluk River	1971-1973, 1976, 1978-2013
Kwethluk River	1989, 1991, 1992, 1997, 2000-2013
Nikolai (Village/City)	2004
NYAC weir	1988
Salmon River (Aniak)	2006-2008, 2013
Salmon River (Pitka Fork)	1981, 1982
Takotna River	2000-2013
Tatlawiksuk River	1998-2013
Tuluksak River	1991-1994, 2001-2013
Mark/Recapture	
Birch Tree Crossing	2002
Kalskag Fish Wheel	2002
Test Fishing	
Kwegooyuk (Village/City)	1967, 1969, 1971-1975, 1977-1981
W1 (Subdistrict 1)	1981, 1993-1995, 2000-2005, 2007, 2008

Table 113.–List of years for which sockeye salmon age-sex-length data was collected from Kuskokwim Management Area projects.

Project Type / Name	Years with available ASL data
Commercial Catch	
W1 (Subdistrict 1)	1969, 1972, 1975, 1977, 1980-2000, 2004, 2005, 2008-2013
W4 (Subdistrict 4)	1964, 1965, 1967-1970, 1974-1978, 1980-1985, 1987-2001, 2003-2005, 2007-2013
W5 (Goodnews Bay Subdistrict)	1969, 1974, 1977, 1978, 1980-2005, 2007, 2009-2013
Subsistence Catch	
Upper Kuskokwim River	1987
Kuskokwim Bay	1980
Escapement	
Aniak River	1981, 1983, 1985, 2007
George River	2007
Goodnews River (Middle Fork)	1983, 1985-2013
Goodnews River (North Fork)	1989
Kanektok River	1984, 1985, 1987, 1989, 1997, 2002-2005, 2007-2013
Kisaralik River	1986
Kogrukluk River	1968, 1976, 1978, 1980-1994, 2007, 2009-2013
Kwethluk River	1991, 1992, 2000, 2003, 2004, 2006-2013
Salmon River (Aniak)	2007, 2008, 2013
Stony River	1989
Takotna River	2007
Tatlawiksuk River	2007
Telaquana River	2010-2013
Tuluksak River	1991-1994, 2002, 2003, 2007-2013
Mark/Recapture	
Birch Tree Crossing	2002
Kalskag Fish Wheel	2002, 2005-2007, 2012
Salmon River (Aniak)	2012
Kogrukluk River	2012
Telaquana River	2012
Test Fishing	
W1 (Subdistrict 1)	1981, 1994, 1995, 2001-2005, 2012, 2013
Kwegooyuk (Village/City)	1967, 1971-1981

Table 114.–List of years for which coho salmon age-sex-length data was collected from Kuskokwim Management Area projects.

Project Type / Name	Years with available ASL data
Commercial Catch	
W1 (Subdistrict 1)	1961, 1965-1969, 1971-1978, 1980-2002, 2004-2013
W4 (Subdistrict 4)	1967, 1968, 1974-1978, 1980-1998, 2000-2005, 2007-2013
W5 (Goodnews Bay Subdistrict)	1974, 1977, 1980-2001, 2003, 2005, 2009-2013
Subsistence Catch	
Lower Kuskokwim River	1989, 1992
Escapement	
Aniak River	1980
George River	1997, 1999-2013
Goodnews River (Middle Fork)	1988, 1991, 1995, 1996, 1998-2001, 2003-2013
Kanektok River	1983, 1997, 2001-2005, 2007-2009
Kisaralik River	1986
Kogrukluk River	1981-1996, 1998-2013
Kwethluk River	1989, 2000-2004, 2006-2013
Salmon River (Aniak)	2008, 2009, 2013
Takotna River	2000-2013
Tatlawiksuk River	1999-2002, 2004-2013
Tuluksak River	1991-1994, 2001-2013
Mark/Recapture	
Kalskag Fish Wheel	2008, 2009
Test Fishing	
Aniak River	1995
Kwegooyuk (Village/City)	1974, 1975
W1 (Subdistrict 1)	1980, 1994, 1995